THE

JOURNAL OF GAS LIGHTING,

WATER SUPPLY, & SANITARY IMPROVEMENT.

VOL. XI. No. 259—14th YEAR.] LONDON, SEPTEMBER 23, 1862. [Subscription { 15s. in Advance / 18s Credit. } per Ann.] DOUBLE No. Price 1s.

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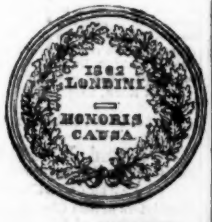

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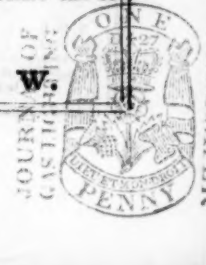

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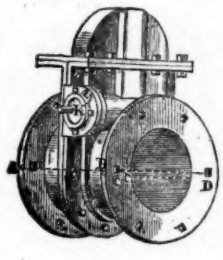

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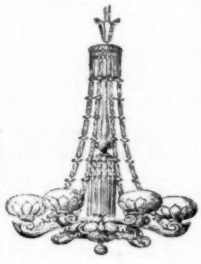

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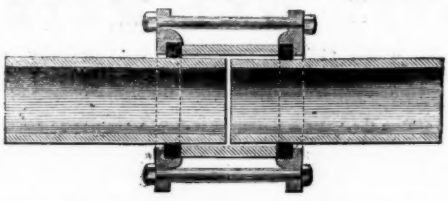

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By Order of the Board,

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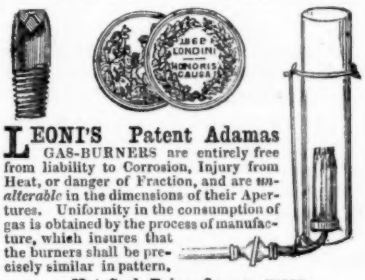

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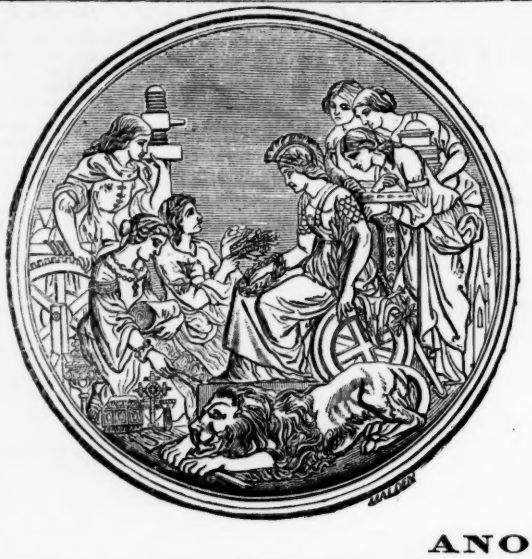

ANOTHER

MEDAL AWARDED BY THE JURY, INTERNATIONAL EXHIBITION,

1862,

To THOMAS GLOVER,

SUFFOLK STREET, CLERKENWELL GREEN, LONDON.

THOMAS GLOVER has great pleasure in informing Gas Companies and his other Patrons, that the *Jury of Class XXXI. of the International Exhibition of* 1862 have awarded, for his Patent Dry Gas-Meter, *a Prize Medal.* The reason given for this Award, in the Juries Official Report, is, "*For excellence of manufacture, as regards Dry Meters.*" See Official Report, p. 346.

It is worthy of remark, that the only two other Firms who receive Awards *both manufacture imitations of Thomas Glover's* Patent Dry Gas-Meter, and the reason given for these Awards is "*construction* and sound workmanship." Thomas Glover, therefore, claims that the *construction* of his Meter has obtained *three Awards from the Jury of the International Exhibition of* 1862; at the same time, *contrasting* the Award granted for his Meter by the words, "*For excellence of manufacture, as regards Dry-Meters.*"

The Prize Meter will be found in Class XXXI., No. 6301, connected with a 1-foot holder, to demonstrate that a 50-light Meter *measures and indicates accurately the small quantity of One Foot.*

WILLIAM PARKINSON AND CO.

(SUCCESSORS TO SAMUEL CROSLEY),

PATENT WET AND DRY GAS-METER MANUFACTURERS, &c.

COTTAGE LANE, CITY ROAD, LONDON, E.C.

Established 1816.

PATENT IMPROVED WET METER.

W. P. and Co. invite especial attention to this Meter, which entirely overcomes the difficulty to which ordinary Wet Meters are subjected, owing to the short range of the Float, which is necessary, in order to meet the requirements of the Sale of Gas Act.

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PATENT IMPROVED DRY METER,

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Which can be seen at all the London Gas-Works. Also Liverpool, Manchester, Sheffield, Nottingham, Belfast, Glasgow, Birmingham, Dublin, Bristol, Leeds, Leicester, Brighton, Southampton, Sunderland, Wolverhampton, Bradford, Norwich, &c., &c.

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MINUTE CLOCKS, PRESSURE GAUGES, PHOTOMETERS, PRESSURE REGISTERS, &c.

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TO CORRESPONDENTS.

No notice can be taken of anonymous communications. Whatever is intended for insertion, must be authenticated by the name and address of the writer; not necessarily for publication, but as a guarantee of good faith.

W. R.—*We have not yet received the continuation of Mr. Rutter's papers on meters and the supply of gas to public lamps.*

P. P., Quebec.—*The law as to the liability of gas companies in respect of damages caused by fires originating in escapes of gas, is clearly laid down by Lord Chief Justice Cockburn, in the case of Blenkiron v. the Great Central Gas Company, reported in the* JOURNAL *for Dec.* 18, 1860. *The report of the application for a new trial in the* JOURNAL *of January* 29, 1861, *may also be consulted with advantage, and the report of the case of Sturgeon v. the same company in the* JOURNAL *of July* 16, 1861.

NOTICES.

The subscription is 15s. per annum, if paid in advance during the month of January, or 18s. credit, in two sums of 9s. each, in July and January of each year. Post-Office orders must be made payable at the Charing-Cross Money-Order Office, to William H. Bennett, No. 42, Parliament Street, Westminster.

The next number will be published on Tuesday, October 7, and the subsequent numbers on each successive alternate Tuesday.

Stamped copies, when forwarded by post, must be folded so as to expose the stamp; they are otherwise liable to the full postage charge for letters.

This JOURNAL has been duly registered at the General Post Office for transmission abroad.

All Communications to be addressed to the Editor, No. 42, Parliament Street, Westminster; and orders for Advertisements to the Publisher, Mr. W. B. King, No. 11, Bolt Court, Fleet Street.

THE JOURNAL OF GAS LIGHTING,
WATER SUPPLY, & SANITARY IMPROVEMENT.

TUESDAY, SEPTEMBER 23, 1862.

Notes upon Passing Events.

No account of the anti-fire arrangements of London would be complete without a notice of the escapes maintained by the "Society for the Protection of Life from Fire"—a society which dates its improved organization from 1843, when the present secretary and manager, Mr. Sampson, became connected with it. This is a purely voluntary and philanthropic association; with Her Majesty as patron; the Lord Mayor—*ex-officio*—as president; and a committee of twenty gentlemen, who, very wisely, leave all the practical business to their secretary. The society have 77 men on full pay, 4 supernumaries, waiting for vacancies, and 4 inspectors. They commenced with 6 fire-escape stations; in 1845, increased to 11; in 1850, to 28; in 1855, to 43; in 1860, to 70; and, in the present year, to 75. The subscriptions have kept pace with the demand, so far; but there is room, in Mr. Low's opinion, for 10 additional stations. The stations are appointed strictly in reference to population, with the fixed rule of their having them, if possible, at distances of half a mile from each other. The corporation of London has steadily supported the society, giving, in 1846, a gratuity of £400, and, since that date, an annual vote of £150. Most of the metropolitan parishes subscribe. During the last five years, on an average, 71 lives have every year been saved by these fire-escapes. This number would be materially increased, if telegraphic communication were opened between the police and the fire-escape stations. The first quarter of an hour is the time for saving life, when a staircase or basement is on fire: when the fire-engines have arrived, and begin to work, it is generally too late—the inmates are usually stifled, if not actually burned. The value of the plant of the society, in fire-escapes and watch-boxes, is estimated at £8000; the income expended amounts to about £7000: thus, each life saved costs about £100. The machines are chiefly of wood, very light, very strong—built with all the care of a first cabriolet. Those of the most recent construction will, on an emergency, extend to the height of 60 feet. The machinery for managing this admirable institution is extremely simple. A committee of four meets once a month, and regulates the finance and the patronage. The secretary has substantially uncontrolled command over the practical department. The fire-escape men are governed by rules, the pith of which is contained in the following paragraph:—"The whole attention and utmost energy of the conductor are to be given to the preservation of life; and, having ascertained beyond a doubt that the inmates are out of danger, and that no further service is required of him, he must make his escape back to his station with all reasonable speed." The existence of this fire-escape institution is an additional argument against turning fire-suppression over to the police. This £7000 a year would be lost, and the simple vigorous machinery of management replaced by something much more regular and complicated, with more writing, more printed returns, checks, and audits, and less real work. The Fire-Brigade Committee, in their letter to the Home Secretary in February of the present year, call special attention to the provisions of the Manchester Police Act, under which the corporation, who maintain the staff and plant of the Fire-Brigade, "assess rateably upon all parties concerned, as proprietors of property damaged by fire, the expenses specially incurred in putting out each particular fire. . . . Where the property is insured, these expenses are paid rateably by the offices concerned; where uninsured, they are borne by the proprietors." This would certainly be one way of making it the interest of every honest man to insure.

Mr. Baddeley—who grandly described himself to the Select Committee as "a civil engineer, who had for forty years, as a matter of science, independently of his business connexion, devoted himself entirely to the study of the protection of life and property from fire"—is a fine specimen of the *doctrinaire* witness; all for centralization under Government, viciously hostile to all private management except his own, yet quite unable to give any reasons for his opinions. He cannot say that the arrangements of the Fire-Brigade are not efficient, so he says, "The expenditure of the Fire-Brigade has been very lavish." When he is pressed to state in what this lavishness consists, he says, "A large amount of money is spent in gratuities to policemen and refreshments, which are not necessary to fire-extinction." He complains that, practically, the police are in the pay of the Fire-Brigade. But, although Mr. Baddeley considers the Fire-Brigade management extravagant, he proposes by special Act of Parliament to make the fire-offices pay the whole of this extravagant sum—£25,000 a year—into a fund to be managed by the police. On this fund he desires to throw the cost of the fire-escapes, another £7000, now con-

tibuted voluntarily. It is very difficult to see what the public is to gain in economy under Mr. Baddeley's own calculation. But a little later the origin of this warm desire to see all funds and Fire-Brigade power transferred to the police crops out. The great Baddeley has been a fire-escape inspector, and the police have not paid so much respect to his orders as to those of the brigade. Of course, as a real *gobe-mouche*, he would not be consistent without a bit of private, secret, confidential evidence. "He (Baddeley) knows from the best anonymous authority, that the late Sir Robert Peel always intended to transfer the Fire-Brigade powers to the metropolitan police." When asked what means he had of knowing this, he replies, "I had friends who were intimate with Sir Robert, and I was so thoroughly informed at the time, that I made designs for engines for the use of the Fire-Police." "Are you an engine-maker?" asks an inquisitive committeeman. "No; but I have planned and designed a great many engines." The evidence of Sir Robert Peel's intentions is "as complete as that of the big stone a Breton peasant shows you as proof of some extraordinary trick of the devil." This is a specimen of the best evidence brought forward in favour of the police project. We observe that the Fire Committee of the Dublin corporation have published a set of questions, to be answered by the candidates for the office of chief of the brigade, involving a practical acquaintance with the business of a fireman. This is a step in advance. Not long since, a half-pay officer was considered fit for any appointment in the gift of magistrates or corporations.

After carefully examining the plans and evidence attached to the report of the commissioners on the embankment of the Surrey side of the Thames, we are confirmed in our impression that limited recommendations of the commissioners include what will effect a great public improvement, and nearly all that is at present practicable. It must be remembered that the main-drainage works will effectually dry the low-lying streets between Westminster Bridge and Deptford, and thus remove the pestiferous evil of tide-locked sewers. The new Wellington Street, in continuation of York Road, will open a straight route between the south side of Westminster Bridge and the London Bridge Railway Stations, much shorter than following the bend of the river. There remains to be considered, the incontestable advantage of a solid wall, which would exclude the highest tides. That must be left to the private interest of the landowners and wharf-owners between London and Westminster Bridges, because it would be impossible to raise the compensation which would be required for destroying or injuring the valuable trades carried on in that crowded district. To be sure, some of the evidence against any embankment is comical enough. One old lighterman protests against dressing the river and cutting off the mud-banks, because it would leave him no shallow shores to run upon when a leaky barge threatened to sink. The same reasoning would suggest the propriety of reducing the whole depth of the Thames to trading dimensions. The scheme of the commissioners will afford a thoroughfare from Westminster Bridge to Battersea Park, which will, of itself, be a delightful walk or ride, very materially improve the condition of a part of Lambeth now subject to floods, and lead to the improvement of a class of property near the potteries of a very inferior character. To the goods traffic arising out of the South Western and London, Chatham, and Dover Railway Stations, at Nine Elms and Blackfriars Bridge, it will be of great value. When all the works are complete, easy access will be afforded by the new streets and roadway embankments between Vauxhall and London Bridge. It is to be hoped that the opportunity of making an advantageous arrangement as to Lambeth Palace Park afforded by the death of the Archbishop of Canterbury, will not be lost. It is proposed that the roadway, on reaching Bishop's Walk, shall fall back and join Palace New Road, which communicates with York Road. At present, Palace New Road ends in a footpath at the Palace end. At Lambeth Palace, the Surrey embankment will cross the space between the New Lambeth Bridge and the Lambeth Road. At Vauxhall, it will communicate with the High Street; and, at Nine Elms, make two branches connecting it with the railway-station, and a little further on with Battersea Road; thus affording a large amount of additional convenience for both business and pleasure. The cost is estimated at £1,100,000. We cannot help thinking that if some of the railway companies were permitted to use part of the embankment for heavy goods line, they would be willing to pay a large share of the cost. By next session, we shall have the report of the third commission on the best route for the street that is to connect the embankment roadway at Blackfriars with the City. Of course, the commissioners were not spared the tedious self-complacent absurdities of the amateurs and engineering bores who so sorely tried their patience when the northern embankment was under consideration, but we must defer a selection from these gems of evidence for another opportunity.

The Commissioners of the International Exhibition continue to be consistently unfortunate in their arrangements. The last story comes out of the Bankruptcy Court, where poor M. Veilliard, the French contractor, was driven, as a reward for the kag-mag he laid before his customers in the month of May—a mistake which his subsequent improvement never redeemed. The origin of the Frenchman's failure, in spite of so grand an army of customers, is as simple as it was certain. He had no capital, and no credit, for so large an undertaking; but he had a friend, in a sort of Lord Dundreary with a taste for cookery and speculation. Dundreary Cadogan, curiously enough, engaged the services of solicitors, who were also the solicitors of the commissioners; and, under the bright idea that it was as good, if not better, to be lucky as rich, he induced M. Veilliard, who had nothing, to offer a good deal more for the concession of the feeding department than those really Parisian *restaurateurs* who had something, in addition to a Dundreary friend. The poor adventurer can always venture to bid more rent for any speculation that does not require ready money than the man of capital, whether it be for a public-house or a farm. The commissioners, in their apology, say that they took M. Veilliard because he bid more money than any one else, and was respectable. So he was, no doubt, quite respectable enough to be trusted with a tavern, at £100 a year, or 100 dozens of Bordeaux; but they ought to have known that no amount of personal respectability can make up for want of capital, where a great outlay is involved. Indeed, they did know it; for they made it their excuse for the very wise job by which, under a sham competition, the tenders of Kelk and Lucas Brothers were accepted for the building. The wicked world, however, will long continue to think that M. Veilliard owed his success and ruin to having a Lord Dundreary for his private secretary. Most contracts go by favour when boards and commissions are the arbiters: that seems inevitable; but, if boards and commissions wish to lead an easy life, they should take care that the articles supplied be good, if dear. If M. Veilliard had given as good dinners as Simpson's, the Rainbow, the London, or the Wellington, even if a little dearer, there would have been no outcry, as it was under the pretence of rival kitchens. Your feeding in the French department was no more French than at any cold luncheon-house in the City; but very indifferent, and ten times as dear. Kelk and Lucas did for the commissioners what, probably, no other firm could or would; therefore, that job that so highly excited the wrath of Sir Joseph Paxton—and he has some experience of building jobs—was excusable. But the contract with M. Veilliard pleased no one except the honourable the private secretary.

The corporation of London has just lost one of its cleverest servants in Mr. Charles Pearson, a man with ability enough to have taken his seat in the Cabinet if he had been as prudent as he was able and ambitious. The latter part of his life illustrates the theory we have just been laying down. To Charles Pearson is due that capital improvement, the underground railway. It was not patriotism but a pension that enlisted his promoting zeal; nevertheless, he did an excellent and enduring work which must always invest his memory with a degree of respect that can never attach to a mere bill-making attorney. Charles Pearson was also a pleasant genial man, and never attempted to enhance his importance by cultivating the manners of a hog or the tone of a bear. What a pity it is that successful citizens do not all learn that goodnature, if politeness is impossible, doubles the influence of a man of position or income!

Circular to Gas Companies.

In our remarks on the accounts furnished by the metropolitan gas companies, we predicted that they would afford employment to Mr. Hughes in the construction of tables to show how badly some of the companies manage their works, and how necessary it is that he should be appointed dictator over

all. That prediction was fulfilled, within three days, by the publication, in the *Daily News*, of a letter, with an accompanying table, signed, "A Ratepayer," which our readers would have no difficulty in recognizing as the production of Mr. Samuel Hughes, or of one of his satellites; and, for recklessness of assertion and untruthfulness, it surpasses most of the emanations from that source. Assuming it to be Mr. Hughes who, Proteus-like, has taken the form of "A Ratepayer," we can well understand why he should not like to appear more distinctly, seeing the little benefit the public have hitherto reaped from his labours connected with the metropolitan gas companies, and how much he has himself profited by the notoriety he has acquired at the public expense. It may be regarded, at the same time, as evidence of conscious weakness of the present attack, that the writer does not venture to sign his name. It was said of the Proteus of heathen mythology, that, when questions were propounded which he could not or did not like to answer, he eluded the grasp by assuming the form of some animal, or by disappearing in a flame of fire or in a whirlwind. The plan of assuming different forms to avoid responsibility is now more common than of old; but, though the modern Proteus may be as evanescent as a flash-in-the-pan, or as "viewless as the winds," he leaves impressions in print that require to be effaced when they are calculated to mislead, as are those of "A Ratepayer."

The first paragraph of his letter makes an imputation which is as senseless as it is totally groundless. The Home Secretary is accused of having, for some unexplained reason, withheld the accounts, which, not without "strong pressure," were laid before Parliament and printed. Instead of that being the case, the Home Secretary laid the accounts on the table of the House of Commons on the 16th of June, and, so little interest did any Member take in the matter, that they remained unnoticed till the 4th of August, when Sir John Shelley moved that they be printed, and an order to that effect was made, *nem. con.* If any pressure had to be used on the occasion it must have been on Sir John Shelley, who is probably by this time disgusted with the part which some of his constituents induced him to take in the attack on the metropolitan gas companies.

The next assertion of "A Ratepayer" is remarkable chiefly for a suppression of truth to suit his purposes. He says: "The object sought to be attained in the publication of the accounts is the reduction in the price of gas charged by companies realizing a dividend of 10 per cent." But he omits to notice that the reduction does not become compulsory until each company has accumulated a reserve-fund equal to 10 per cent. of its share capital. One company only has hitherto acquired a substantial reserve-fund, and that company reduced its price at Christmas last, and discontinued all charges for meters, thus affording practical proof that the public derive benefit from the prosperity of gas companies under the present system, which "A Ratepayer" considers so unsatisfactory. The principal remedy he proposes for the redress of the imaginary grievances of the metropolitan gas consumers is the very one which we predicted Mr. Hughes would recommend, viz., that he should be appointed dictator over all—not, indeed, does "A Ratepayer" throw off his mask so far as to mention Mr. Hughes by name, but the recommendation is thus expressed: "As the vestries will not do their duty, it may be requisite again to appeal to Parliament *to nominate some central authority* to control the action and regulate the monopoly not only of gas but water companies." The vestrie who are accused of neglecting their duty have evidence in the reduction of price by one of the metropolitan gas companies that the Gas-Works Clauses Act does operate to protect their interests; and they have good reason to believe that the intervention of Mr. Hughes, or "some central authority," would only delay the period when they will derive advantage from increasing dividends of the gas companies; hence they may be excused by the public for letting well alone.

The fourth paragraph, which relates to the capitals of the London gas companies, bears such strong internal evidence of its paternity, both in style and untruthfulness, and contains such gross misrepresentations of facts, that we feel compelled to set the question at rest by referring to what passed on the subject before the committee of the House of Commons in 1860. "A Ratepayer" affirms that the committee "was too weak to enforce the publication of the several gas companies' accounts before the committee, with the view of their being submitted to an accountant, as in the precedent of the 'water' inquiry, 1852, to report on and to settle. There was good reason for the frantic opposition of the companies, evidenced in the accounts before us." Mr. Hughes has *in propriâ personâ* made similar accusations in similar language, and those assertions have been contradicted on every available occasion. They are not only untrue, but they are in every particular the reverse of truth. On the 15th of May, 1860, the thirteen metropolitan gas companies laid before the committee returns of their accounts for 1859, and for the four previous years, and Mr. Baxter, on their behalf, offered to produce evidence as to the capital of each company, exactly similar to the evidence given before the water committee in 1852. We insert a full report of the proceedings in the committee on this point for the purpose of setting the matter fully before our readers:—

Mr Wyatt (the agent of the promoters of the bill): What we want is, what was done in the Water-Works Clauses Act, namely, to ascertain the capital of the company, to know what the 10 per cent. is applicable to. The Water-Works Clauses Act contains the same provisions, but even the committee which sat upon that in 1852 thought it was not sufficient, and the company fairly subjected their accounts to an audit for the purpose of ascertaining what the capital was, and it was considered that we should not take the *ipse dixit* of any secretary or company as to what the capital was. It turned out, in almost every instance, that the capital was very considerably less than the amount stated.

Chairman: Would there be any objection, Mr. Baxter, to some kind of full and formal objection [investigation?], after the Act is passed, by which it should be settled once and for ever, what is the capital of each company?

Mr. Baxter: My friend has been asserting what I fear he knows very little about. I happened to be concerned for the water companies in 1852. My friend says that the capital was cut down, but he is perfectly in error. Each company brought in its separate bill; they stated their capital, and there was only one company which had stated a capital upon the face of the bill which was cut down; they had issued some stock at a discount, and they put that capital down to the total stock registered, instead of allowing for the discount. The New River Company had been acting under a charter, and had spent a million and a half of money.

Mr. Wyatt: The Blue Books speak for themselves.

Chairman: Whether cut down or not, the capital was adjusted and determined before the Act came into operation. It is suggested now, that no one knows what the gas companies capital is.

Mr. Wyatt: The total capital of the water companies was alleged to be £3,000,000, and it turned out to be £2,100,000.

Mr. Baxter: We will agree, if you please, that the Home Secretary shall prescribe a form of account, and that the companies shall make periodical returns. If the committee like now to take the proof of each of the companies as to what their capital is, they are prepared to call the officers to produce the accounts.

Mr. Wyatt: The committee are not competent to audit the accounts.

Mr. Baxter: My friend said just now that the committee on the water companies had investigated the accounts.

Mr. Wyatt: They caused the accounts to be audited.

Mr. Baxter: My friend abides under hallucinations. No accountant was ever called in, I will answer for it, before the committee. Each company came in, and by its secretary proved its capital, and there was an end of it. We will do the same here, if you please.

Chairman: I would rather leave the clause, and put it upon some one else.

Mr. Baxter: We know where we are when we are before a committee of the House of Commons, but when we are elsewhere, it becomes a very unpleasant business. I am quite willing now to call each secretary, and prove the capital of each company; or I am willing to place it upon the certificate of the chairman, secretary and auditors, as to what the capital is. I am willing that the Secretary of State should prescribe the form of account, but we ask you to leave us, under these circumstances, to independent action. Where a man's office depends upon his finding fault, we know practically what the result is.

It will be perceived, from the foregoing report, that the oft-repeated assertions that the capitals of the water companies were reduced by the committee of 1852, and that their accounts were examined by an accountant, are not true; that the same ordeal which those companies passed through, the gas companies volunteered to undergo; and that the alleged contrast in the manner of dealing with the capitals of the water companies, in 1852, and with the capitals of the metropolitan gas companies, in 1860, has no foundation whatever in fact. If, as we have good reason to believe, the person who signs himself "A Ratepayer" was present in the committee-room when the proceedings we have reported took place, his assertion that the gas companies made a "frantic opposition" to be guided by the precedent of the water companies, can be characterized as nothing less than deliberately false. The allegation by Mr. Wyatt that the capital of the water companies was reduced was founded, probably, on a misapprehension of the statement that £3,000,000 had been expended on the works, of which, £2,100,000 was share capital, the balance of £900,000 having been paid out of profits.

As "A Ratepayer" proceeds with his investigation of the accounts, he becomes more and more dissatisfied; and even the assumed precedent of the water companies fails to meet his views. It was only want of space, he says, that prevented him from showing what is "the capital necessary to the economical and safe working of the business;" which statement, we are

told, would "enforce the necessity of another parliamentary inquiry, to settle the capital entitled to 10 per cent. dividend." It would require much more powerful arguments and more trustworthy statements than those of "A Ratepayer" to urge the metropolitan vestries to promote another such inquiry, after the experience they have gained of its cost and futility on the previous occasion.

Having thus disposed of the question of capital, we have next to remark on the dishonesty of "A Ratepayer," in omitting the words, "and general charges," which are attached in the accounts to the items of "stationery and printing," so as to make it appear that certain large sums were squandered by each company on stationery and printing only. Founding his attacks on this misrepresentation, he launches on a turbid sea of invective against "the giant company"—the Imperial—for having expended £4063 in stationery and printing. If he had had any experience in conducting a business with 50,000 accounts in the ledger, and collections made quarterly, he would, we apprehend, have considered that a very moderate sum for such expenses as are included under the head of "stationery, printing, *and general charges*."

On whatever portion of the accounts "A Ratepayer" comments, his assertions are either untrue, or misrepresentations of the truth. Thus, for example, he accuses the London and Phœnix companies with violating the Metropolis Gas Act, by charging 5s. and 4s. 9d. per 1000 feet for gas, but he omits to mention that the localities in which those prices are charged are beyond the limits of the metropolis, and, consequently, are not included in the Act. He might, with equal justice, have made a similar accusation against the South Metropolitan, which charges 4s. 8d. in some places; but, that company is said to "stand out in favourable contrast" with the two specially selected for animadversion, and whose capital accounts are said to be "enigmas disgraceful to any public company." Another allegation is, that the parliamentary gas inquiry cost the companies in one year nearly £16,000, while the cost to the parishes, for three years, as by the statement of the Metropolitan Board, was under £4000. Now, the sum total of law and parliamentary charges of all kinds of the thirteen gas companies in 1861, was £14,832, and, of that amount, it is stated by "A Ratepayer" that £2500 must be deducted from the Great Central accounts for the Wood Street fire; therefore, according to his own figures, the cost of the parliamentary inquiry was £12,332 instead of £16,000, even supposing all the companies to have been in the same happy position as the Independent, and to have had no ordinary law charges. We notice this accusation of wanton expenditure as a specimen of the reckless manner in which "A Ratepayer" deals with facts and figures.

We come now to consider how far the official publication of these accounts is of value in determining the chief question, of the relative economy with which the respective companies conduct their business; and, for this purpose, we have no hesitation in declaring them to be utterly worthless, owing to the want of uniformity in the plans adopted of filling up the several heads of the returns. Thus, on examining the income side of the accounts, it will be found that in some of the returns the charges on account of public lamps are deducted from the gas-rental, while in others they are entered on the expenditure side, and are mixed up with other charges, so as to make it impossible to separate them. So, again, with bad debts. Some companies have deducted them from the gas-rental and entered that amount net; whereas, other companies have entered the gross rental, and have charged the bad debts on the other side of the account. On the expenditure side, similar irregularity prevails. In some of the accounts, the salaries of inspectors and lamplighters are entered under the head of "distribution" charges, while they are included by other companies in the expenses of management. From this mass of confusion, "A Ratepayer" endeavours to deduce some sage conclusions; and he gives, in a tabular form, three columns, in addition to the items in the accounts, in which are set down the proportion of capital to gas receipts, the per centage of the sale of products to the cost of coal, and the per centage of the cost of management to gas receipts. The capital, the total income, and the total expenditure on the revenue account of each company, may, no doubt, be accurately ascertained from the accounts, and the profits of the year may also be determined; but to contend that, because one company receives a certain amount for a given sum expended in coals, another company, differently situated, should receive a like amount; or that, because one company realizes 75 per cent. on the first cost of coals by the sale of the products, another company must be extravagantly conducted because it realizes only 19 per cent., is altogether fallacious, for such arguments have no bearing on the practical management of gas-works. The trade in gas in a large city must be looked at as a whole; and, as such, we have considered it in the analysis of the accounts of the metropolitan companies on the next page. In these tables we have given details of expenditure on revenue account by each company for the year 1861; details of income for the year; together with an abstract, showing the profit realized by each; so that the position of each company, and the general results, may be seen at a glance. We have corrected, in the annexed analysis, a few inaccuracies which occurred in the hurried abstract given in our last; and it will be perceived that the average profits on the capital and borrowed moneys of the thirteen companies was 8·028 per cent. The profits of six of the companies exceeded that average; and of those, the South Metropolitan takes the lead, on account of the comparative smallness of its capital, arising, first, from the works being principally erected on leasehold land; and, secondly, from the application of profits for several years to extensions. The reserved fund of that company is completed within about £1500; and, as a necessary consequence, it has reduced the price of gas, and discontinued the charge for meter-rent. In the case of the Equitable Company, £3163 of the profits arise from premiums on shares sold. The average profits on the gas-rental during the last year was 32·723 per cent.; or, in other words, the expenses of carrying on the works amounted to 67·277 per cent. of the amount of gas sold. The expenses of five of the companies were considerably *above* the average; but three of those companies sold gas for the first nine months of the year at 4s. per 1000 feet. The expenses of four of the companies were *less* than the average; and, in the case of the Equitable Company, very considerably less—each item, with the exception of the small ones of directors and auditors, being proportionably below the corresponding items of the other companies, and bearing evidence of strict economy and superior management in every department. The returns show that the capitals and borrowed moneys of the thirteen gas companies amount to £5,647,900. 11s. 2d.; but that sum, large as it is, does not represent the whole actual value of the property of the London gas companies. The estimated present market value of the shares, added to the moneys borrowed, represents the enormous total of £8,303,000, which is an increase of about two millions and a quarter since 1859, when the districting arrangements came into operation.

The sum of 8½ millions, it may be presumed, is too gigantic to encourage the notion of buying up the gas companies, and trying the Manchester system of gas supply in the metropolis. But, even could the works be obtained at a much less price, there would be little inducement to make so dangerous an experiment, for in Manchester itself the plan has been virtually abandoned of raising, by a high charge for gas, money for town improvements, which should be raised by rates. In another part of the JOURNAL we have published a report of the proceedings of the Manchester Town Council, with a statement of the gas accounts, from which it will be seen that a proposition for a further reduction in the price of gas was carried by a majority of 29 against 14. Alderman Heywood and Councillor Grundy, true to the principle they have previously advocated—that the improvement of the town should be effected out of gas profits, and not by special rates—objected strongly to a reduction in price which would leave only a small calculated surplus for the Improvement Committee. The proposed reduction was carried in the face of a falling-off of 2 per cent. in the gas-rental, which is attributable to the present depressed state of the Manchester trade; but it is expected to meet the deficiency by a more advantageous contract for the disposal of residual products, and by increased consumption consequent on the lower charge for gas. The reduction is to take effect at Christmas next, after which period the price to consumers of less than 500,000 feet per quarter is to be 3s. 9d., and, to the largest consumers, 3s. 6d.—the illuminating power of the gas, as tested during the past year, being 21·83 sperm candles. Even this reduction in the price will not place the gas consumers of Manchester on an equality with those of Liverpool, the gas company of that town having, at their meeting in

DETAILS OF INCOME, FOR THE YEAR 1861.

Name of Company.	Total Gas-Rental.	Common Gas, at 4s., 4s. 2d., 4s. 3d., and 4s. 6d., per 1000 Cubic Feet.	Cannel Gas, at 6s. per 1000 Cubic Feet.	Public Lights, including Lighting and Contracts.	Meter-Rents.	Old Materials.	Products.	Miscellaneous.	Total Income from all Sources.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Chartered	214,103 3 8	150,122 1 0	41,256 15 2	22,724 7 6	4,366 4 3	620 9 11	47,040 1 0	5,539 6 1	271,669 4 11
City of London	82,234 19 0	74,853 3 11	3,817 0 1	3,564 15 0	...	998 19 3	23,296 16 0	11 11 0	106,542 5 3
Commercial	94,324 10 11	80,815 13 3	...	13,508 17 3	...	...	21,393 9 10	532 13 4	116,250 14 1
Equitable	66,052 11 3	52,746 8 0	6,001 17 4	7,304 5 11	1,470 2 10	219 10 7	13,540 1 6	3,211 6 2	84,493 12 4
Great Central	61,882 18 4	54,075 7 6	...	7,807 10 10	...	174 2 2	20,624 19 4	39 7 6	82,721 7 4
Imperial	356,929 17 8	291,996 6 1	...	64,933 11 7	3,971 11 8	1377 3 9	79,316 16 1	8,592 14 2	450,188 3 4
Independent	59,202 10 0	51,939 18 8	...	7,262 11 4	1,699 6 4	108 19 5	14,938 16 8	...	75,949 12 5
London	127,682 19 9	102,855 11 4	6,883 8 8	17,943 19 9	2,120 0 0	389 17 6	35,454 7 6	2,424 19 3	168,072 4 0
Phœnix	128,088 18 10	109,915 0 9	...	18,173 18 1	...	504 5 1	34,556 2 1	...	163,149 6 0
Ratcliff	27,776 12 1	23,741 6 4	...	4,035 5 9	12 0 6	39 1 7	7,040 3 5	48 13 3	34,916 10 10
South Metropolitan	57,407 5 1	46,347 7 11	...	11,059 17 2	114 13 9	534 8 7	16,419 2 10	1,001 16 7	75,477 6 10
Surrey Consumers	40,410 6 4	36,069 12 11	...	10,340 13 5	...	...	15,492 5 8	719 8 9	62,622 0 9
Western	63,495 14 9	...	52,865 3 4	10,630 11 5	1,899 16 3	72 9 10	6,189 4 6	...	71,657 5 4
	1,385,592 7 8	1,075,477 17 8	110,824 4 7	199,290 5 5	15,653 15 7	5039 7 8	335,302 6 5	22,121 16 1	1,763,709 13 5

ABSTRACT OF DETAILS OF INCOME AND EXPENDITURE, SHOWING THE PROFIT REALIZED.

Total Expenditure on Revenue Account.	Gross Profit.	Capital and Borrowed Moneys.	Gross Profit per Cent. on the Capital and Borrowed Moneys.	Gross Profit per Cent. on the Gas-Rental.
£ s. d.	£ s. d.	£ s. d.		
218,900 9 7	52,768 15 4	719,460 0 6	7·334	24·132
87,524 16 11	19,017 8 4	407,805 0 0	4 663	23·125
85,407 8 2	30,843 5 11	330,539 0 0	9·331	32·698
51,176 12 2	33,317 0 2	280,400 0 0	11·882	50·442
64,499 12 7	18,221 14 9	238,160 0 0	7·650	29·444
324,504 1 6	125,684 1 10	1,579,755 5 9	7·955	35·212
59,949 15 0	15,999 17 5	186,782 2 1	8·565	26·855
126,356 18 1	41,715 5 11	651,692 0 0	6·401	32·671
112,979 5 9	50,170 0 3	540,000 0 0	9·290	39·169
27,928 8 4	6,988 2 6	99,096 13 4	7·051	25·158
52,910 19 0	22,566 7 10	163,525 10 0	13 799	39·134
47,626 18 8	14.995 2 1	184,894 0 0	8·110	32·309
50,525 9 0	21,131 16 4	265,791 0 0	7·950	33·279
1,310,299 14 9	453,418 18 8	5,647,900 11 2	8·028 Average.	32·723 Average.

DETAILS OF EXPENDITURE ON REVENUE ACCOUNT, FOR THE YEAR 1861.

Name of Company.	Coals, including Carriage and Dues.	Purifying Materials.	Supervision and Labour in Manufacture of Gas.	Ordinary Repair and Maintenance of Premises, Tools, and other Implements.	Rents, Rates, and Taxes.	Salaries.	Collectors Commission.	Stationery, Printing, and General Charges.	Directors.	Auditors.	Expenses of Distribution and Ordinary Repairs of Mains and Services.	Restoring and Replacing Meters.	Law and Parliamentary Charges.	Bad Debts and Extraordinary Expenses.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Chartered	127,387 4 2	2,137 9 5	25,517 14 4	22,679 13 1	8,455 3 9	7,065 9 1	2,932 17 4	2,575 1 0	2,277 9 0	162 15 0	9,729 15 10	4,858 17 7	1,457 11 4	1663 8 8
City of London	46,309 17 11	1,858 3 7	17,712 14 6	7,387 0 3	1,849 4 10	1,245 0 0	610 0 0	965 14 10	897 15 0	109 4 0	5,365 0 8	2,144 13 3	112 13 3	957 14 10
Commercial	51,970 6 10	1,883 12 0	13,695 8 1	5,035 5 5	2,484 3 5	1,805 13 0	1,167 13 5	1,482 8 1	1,500 0 0	150 0 0	2,057 1 7	934 0 0	1,241 16 4	—
Equitable	29,519 11 7	741 2 10	6,353 12 3	5,257 1 6	918 8 11	1,437 15 2	850 11 9	615 19 8	1,000 0 0	60 0 0	2,899 1 2	1,199 0 4	324 7 0	—
Great Central	30,759 13 7	726 3 0	10,382 12 5	3,602 19 11	1,246 9 9	1,045 14 0	611 3 0	1,267 15 9	1,000 0 0	83 13 3	5,149 18 8	518 14 2	4,569 14 1	3535 1 0
Imperial	194,867 18 3	5,209 5 3	36,997 4 11	28,136 14 1	7,391 0 7	9,957 4 0	5,675 18 9	4,062 19 2	2,492 15 0	157 4 2	22,968 18 0	1,523 0 8	5,063 18 8	—
Independent	34,956 8 2	545 2 6	9,529 19 6	1,521 4 6	1,488 9 1	1,655 0 0	858 0 11	597 16 3	1,050 0 0	100 0 0	5,106 8 8	1,699 6 4	—	841 19 1
London	61,525 9 1	1,724 12 8	15,760 10 6	22,881 10 9	5,260 13 3	2,041 18 0	1,872 15 8	2,209 13 5	1,392 18 4	95 18 9	7,902 13 11	3,136 18 11	550 19 10	—
Phœnix	57,576 19 6	1,119 6 0	14,349 9 4	12,582 0 8	4,960 17 8	1,742 0 10	1,762 12 4	1,987 15 5	1,500 0 0	100 0 0	11,611 4 10	2,420 19 0	308 8 2	957 12 0
Ratcliff	15,867 19 10	647 6 2	5,127 2 9	1,579 1 4	1,171 19 2	600 0 0	271 18 0	621 3 9	525 0 0	20 0 0	781 5 10	17 16 0	398 8 0	299 7 6
South Metropolitan	24,556 8 11	893 19 3	11,347 10 1	4,050 10 3	1,916 18 4	1,877 8 10	723 11 0	1,981 17 9	1,000 0 0	63 0 0	2,864 5 7	1,650 13 4	44 15 8	—
Surrey Consumers	22,376 9 1	333 6 0	15,194 17 2	4,052 10 6	1,319 8 1	1,949 18 9	617 6 8	333 19 4	800 0 0	31 10 0	135 9 5	418 8 0	63 15 8	—
Western	30,877 17 4	255 10 7	5,820 14 5	3,960 2 3	861 0 6	1,772 0 0	779 2 8	637 2 9	1,000 0 0	80 0 0	2,997 15 9	400 6 0	695 16 0	388 0 9
	728,552 4 3	18,014 19 3	187,789 10 3	122,725 14 6	39,324 2 4	34,195 1 8	18,733 11 6	19,399 7 2	16,435 17 4	1213 5 2	79,568 19 11	20,922 13 7	14,832 4 0	8643 3 10

August last, reduced the price to 3s. 7d. per 1000 feet to all consumers within the borough; the reduction to take effect from July last. The reserved fund of that company is now completed, and their affairs are so prosperous that, by the operation of the Gas-Works Clauses Act, they will possibly be compelled to make a still further reduction in price at their next annual meeting. Such is the result of private enterprise, ably conducted; and, though the Manchester corporation came into possession of their gas-works on far more favourable conditions than would be possible for other local authorities who have to purchase the interests of existing companies, they cannot compete with the Liverpool Gas Company; and, though obliged to abandon the fallacious system of applying gas profits to other purposes, the great majority of the gas consumers of Manchester are still placed in a worse position than those of the neighbouring town.

The New York papers are highly incensed against the gas companies of that city for having given notice to their customers that the tax of fifteen cents (7½d.) per 1000 feet, imposed by the recent Act of Congress, will be added to their gas bills. Public writers in America appear to be ignorant of the inexorable law of political economy, that consumers must ultimately pay the taxes imposed on manufactured articles, and gas comes strictly within that category. It is alleged that there is a difference between a public body and a small trader, but the difference is only in idea. If the price previously charged were only fairly remunerative for the capital and labour employed in the production and distribution of gas, an addition to the price equal to the tax imposed does not increase the profits of the company, but rather places them at disadvantage, by tending to diminish the quantity consumed. The gas companies of America would, indeed, be fully justified in raising their prices, independently of the tax, to compensate for the increased advance in price of coals, wages, and of every other element in the cost of gas, consequent on the depreciation of the currency. The loss they must experience in having to pay in gold, or in gold's worth, and to receive payment in paper, must be much more than the direct tax of fifteen cents per 1000 feet. According to the last advices, gold was at a premium of from 18 to 20 per cent., or, in other words, 118 or 120 dollars in paper must be paid for 100 dollars worth of coal. Labour would rise in a still greater proportion, owing to the drain to supply the army, and the profits of the American gas companies must disappear unless they advance their prices with the rise of prices of all other articles.

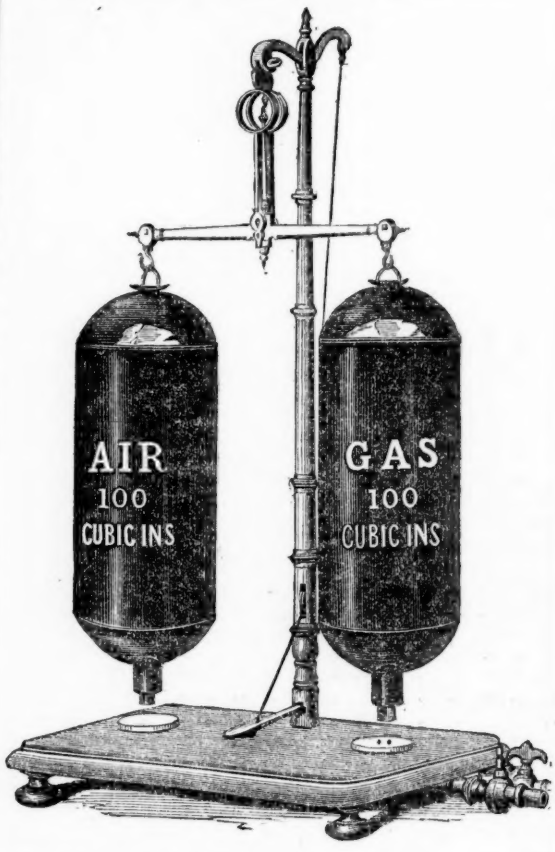
Attention has been recalled to the production of oxygen gas at a cheap rate, by the use of Webster's patent; and the advertisements of the Oxygen Gas Company state that the reports of Mr. J. H. Pepper and Mr. Dugald Campbell on the process may be inspected at the office of the company. We applied to see them, and to make extracts from them, but were refused; and, we can, therefore, only presume that Webster's patent relates to the manufacture of oxygen gas from the nitrate of soda—a process of which the details are given in the admirable paper by MM. Sainte-Claire Deville and Debray, inserted in our issue of Feb. 26, 1861. On examining the records of the Patent-Office, we find two applications for patents—one on Nov. 5, 1860, and the other of April 20, 1861, for which provisional protection only was obtained; but, on the 2nd of July last, a patent was applied for, for "*Improved apparatus for the manufacture of gas for illumination*," the specification of which will not be made public till January next.

A controversy is now being somewhat vigorously carried on between two sections of shareholders in the United General Gas Company, in which we apprehend both parties are mistaken as to the means by which the property may be best rescued from its present depressed condition. This is an old-established company, created by Royal Charter some forty years ago, having its head-quarters in London, and a paid-up capital of £450,000. At one period, it had the exclusive supply of gas in Dublin, Limerick, Cork, Plymouth, and Devonport; but, local companies having been formed in them all, it has sold, at a great sacrifice, the works in the three last-named towns, and now shares only the two former, in conjunction with the local companies. We believe the sums realized by the sale of these three works have been expended in extensions of the Dublin and Limerick works, which are all the company has now to show for its original capital of £450,000. In Dublin, the local company, with a capital of only about one-third of its rival, has secured a rental of £40,000 a year, from private consumers alone; while the old company has retained a somewhat greater rental, including the whole of the public lighting, at the unremunerating price of £3. 1s. 6d. per lamp. In Limerick, the corporation have leased the works of the local company; and a competition, of the most uncompromising character, is now carried on between the two bodies. It can scarcely, therefore, be wondered at that, with establishments to maintain in London, as well as in Dublin and Limerick, there should be only about £11,000 to divide, upon a gas-rental of £50,000, or even £60,000, per annum; nor do we anticipate any good will result from the proposed committee of inquiry. The disease lies deeper than to be cured by the pruning of accounts; and can, in our opinion, be only remedied by an entire change of the constitution of the patient. Let an amalgamation of the two Dublin establishments be carried out on equitable terms, as we feel confident it might be, and the shareholders in the United General Company would soon see their property at double its present value. As for the Limerick works, the corporation will, no doubt, willingly purchase them on reasonable terms; and there may be something further saved for the shareholders to divide out of the wreck of their original capital.

Correspondence.

PROUD'S SPECIFIC-GRAVITY CYLINDER.

SIR,—The apparatus shown in the annexed engraving indicates the gravity of gas as quickly as gold may be weighed in an ordinary balance, and was of great assistance in the manufacture of the gas in these works for the recent balloon experiments of the British Association for the Advancement of Science. It was desirable that the gas for those experiments should be as light as possible; and this instrument, on being connected with the outlet of the station-meter, marked the constant variation of the gas, from its heaviest state, at the commencement of the "charge," to its lightest, at the end, with a precision so satisfactory, that I shall have much pleasure in briefly describing it, if you will kindly permit me to occupy a few lines in your excellent JOURNAL.



The gas cylinder has an inlet and an outlet-tube; the inlet passing through the neck below, and continued through the cylinder nearly to the crown, thus allowing the gas to be at once

delivered to the upper part of the cylinder, where, owing to its lightness, it displaces the air, which is then expelled through the outlet at bottom of cylinder, and in a few seconds of time all trace of air is gone.

The board which supports the balance is provided with a vulcanized india-rubber cushion, perforated for inlet and outlet; and, when the cylinder is down, and the balance at rest, the weight of the cylinder, pressing on the india-rubber, makes the joint gas-tight. The gas then makes its circuit, on the cocks being opened, through the inlet, to the top of the cylinder, returning through the outlet at bottom, and thence conveyed, by a $\frac{3}{8}$-in. copper pipe, to the external air outside of the building.

In manipulating with this instrument, there is no necessity for touching the cylinder with the hand, nor of removing it from the balance from which it is suspended. The whole operation resolves itself into turning the cocks and weighing; and correct observations may be taken almost instantaneously.

Stafford Road, Wolverhampton, Sept. 13, 1862. THOMAS PROUD.

THE METROPOLIS GAS RETURNS.

SIR,—In your leader of the 9th inst., you say: "The South Metropolitan paid 10 per cent. on their capital, leaving a balance of £9901; and, in consequence, made a further reduction of 2d. per 1000 feet of gas." This is not quite correct with reference to the balance, as the dividend for the half year to Christmas, 1861, had to be paid out of the £9901. You, doubtless, arrived at this conclusion, on the presumption that this company's accounts had been made out on the same principle as the others; and, probably, like your readers, may consider that, as we stand alone, my system is wrong; but, although the "illuminating power" of the other companies may be, in this matter, as in their gas, "above the standard," I am not prepared to admit that it is above that of the company which I have the honour to represent.

By referring to the form issued by the Secretary of State, you will find that the companies are ordered to make a return "of all dividends *actually* paid in the above twelve months"—that is, in the twelve months ended Dec. 31, 1861. To comply with this order, it was compulsory to bring forward the balance of revenue account at Dec. 31, 1860; otherwise, how could the companies take credit for the dividend *to* that date, "*actually* paid" in the early part of the year 1861? and, with all respect for the opinions of my brother officers, and their skill in "*carbonizing* accounts," I cannot understand how they can reconcile the certification that they "actually paid" the dividend to Dec. 31, 1861, *in* the year ended *at* that date, when it is well known that it was not received—and, therefore, could not have been paid—until nearly three months afterwards.

I might refer to several of the published accounts, to point out the advantage of inserting the balances at the head of the second division of the form, as directed; but I think I need not go beyond those of my *alma mater*, for therein you see that, for the want of the balance, they appear to have paid a larger dividend than the account justified.

In some of the other accounts, you will find the balances form a separate account; and, in others, there are two balances carried forward. The latter are, I presume, in accordance with some new mode of "book-keeping by *double* entry;" but the former are, I have no doubt, intended to simplify the account. In this, however, I think they have failed; as very few will be able to adjust the balances as they are represented.

The form might, perhaps, be made more simple; but, still, I think the companies may render a true and correct account, with but a few alterations; and, for the sake of uniformity, I would suggest that words should be inserted in the heading of the second division, to show that the account is for "moneys actually received and paid" for gas and products made, and materials used, in the twelve months, and for liabilities on both sides of the account *for* the same period. In the detail of this division, we might strike out "Improvement and extension," as those items cannot be debited to profits. "Rates and taxes" on mains should, as you suggest, be placed under "Distribution." "Bad debts" may be properly deducted from the "Sale of Gas," without being specified, as it is an amount not "actually received." "Retorts" clearly come under "Ordinary repair and maintenance;" and engineers and "supers" may be fairly called "supervisors."

With these alterations, and the insertion of the three balances in the revenue account, I have no hesitation in saying that we may render a correct account, without the words of my esteemed "London friend," "so far as the form will admit."

South Metropolitan Gas-Works, Sept. 18, 1862. T. LIVESEY.

P.S.—There is a slight mistake on the part of the printer in this company's account, in the insertion of the words, "since discontinued," under "Public lighting," instead of under "Rental of meters."

Register of New Patents.

2286.—HERMANN BRAMBACH, of 11, Lungengasse, Cologne, merchant, for "*A new mode of manufacturing gas for illuminating purposes.*" Provisional protection only obtained. Dated Nov. 27, 1861.

This invention consists in passing hydrogen gas, prepared in the usual manner from sulphuric acid, diluted with four or five times its bulk of water, and fragments of zinc or iron, through a vessel containing some easily volatilized hydrocarburet, such as benzine, or the essence of turpentine. The hydrogen combines with a portion of the carbon of the hydrocarburet, and thus forms a gas suitable for illuminating purposes, which gas may either be passed into a receiver or direct to the place where it is required for illuminating.

3006.—BENJAMIN PITT, of 3A, Great Carter Lane, London, engineer; and JAMES JOHN SHEDLOCK, of 1, Wendell Villas, Earl's Court, Kensington, for "*Improvements in cocks or valves for the passage of fluids.*" Patent dated Nov. 28, 1861.

This invention has for its object improvements in cocks or valves for the passage of fluids. For this purpose, a box or case is employed, having inlet and outlet-passages at its ends. The valve works within this box or case; and it is preferred that the box or case in which the valve works should be of a square or rectangular section; and that the inlet and outlet-passages at the two ends thereof should be of a circular section, but of less diameter than the ends of the box or case. Through one side of the box or case, a spindle or axis passes into the interior of the box or case, a stuffing-box being employed to prevent the escape of the fluid around the axis; the inner end of the spindle or axis turns in a suitable bearing, and has fixed upon it an eccentric, or it may be simply a projection. The valve is fixed to the end of a frame, which is supported by and slides on two ledges or guides on the interior of the box or case. The spindle or axis (above mentioned) passes through the frame, so that the cam or projection on it will, when the axis is turned in one direction, press the valve against its seat; and, when the axis is turned in the opposite direction, will move the valve away from its seat. By thus arranging a circular valve in a rectangular box or case, the fluid will be able, when the valve is open, to pass between the periphery of the valve, and the interior of the box or case.

In some cases, in forming the seat for the valve, a suitable recess is made where the seat is to be produced; and the metal, which it is preferred should be type or other comparatively soft metal, is then cast into this recess; the seat is at once produced, and will not require cutting in the lathe, or otherwise. The valve may be either flat or conical, according to the form of the seat; and it is preferred to introduce vulcanized india-rubber between the valve and the frame to which it is fixed. Or, in place of employing a soft-metal seat, a seat of other material may be used; and the valve may be made of any suitable material; and, when desired, it may be faced with leather, or other elastic material.

3041.—WILLIAM EDWARD NEWTON, of the Patent Office, 66, Chancery Lane, London, civil engineer, for "*Improvements in pumps.*" A communication from Calvin Woodward, and George Mills Woodward, both of New York, United States of America. Patent dated Dec. 4, 1861.

This invention consists in an improved mode of applying to pumps the kind of valves known as flap or clack-valves, which affords great facility for their introduction, removal, repair, replacement, and removal. The body of the pump is bored longitudinally to form the cylinder, and is also bored through transversely above and below the cylinder, to form four cylindrical valve-chambers; two below the cylinder for the reception of the two inlet-valves; and two above the cylinder for the reception of the two outlet-valves. These valve-chambers communicate with the interior of the cylinder by means of suitable ports. The lower valve-chambers also communicate by means of other ports with the inlet or suction-pipe, and the upper valve-chambers communicate by means of similar ports with the discharge-pipe. Each chamber, when the body of the pump is made of cast iron, is fitted with a cylindrical bushing of brass or other composition metal, in which there are provided slots to correspond with the ports. The interior surfaces of the bushings constitute the valve-seats. The valves are of the form of a sector or segment of a hollow cylinder, the outer arc of which corresponds with the circle of the interior of the bushing, and each of these valves has close to one edge two journals, one at each end, and these journals fit in bearings provided for their reception in caps, which cover and close the ends of the valve-chambers. The two caps of each chamber are connected by a screw-bolt, which extends entirely through the cover and through both caps, and which is fitted with a nut at each end, or is provided with a head at one end, and fitted with a nut at the other, to secure the caps in place. The caps are of cast iron, and there is inserted across the centre of its inner face, in a dovetail-groove, a piece of brass or composition metal, which has a bearing provided in each end, so that when one bearing is worn out, the piece may be removed and replaced in an inverted position to bring the other bearing in the requisite position for the reception of a valve-journal. The valves operate like ordinary flap-valves, and the operations of the pumps fitted with such valves is precisely similar to that of other pumps.

3048.—JOHN KNOWLEDEN, of Southwark, Surrey, engineer, for "*Improvements in pumps.*" Patent dated Dec. 5, 1861.

The first part of this invention is for an improvement upon an invention for which letters patent were granted to the present patentee, in conjunction with D. Edwards, dated July 7, 1859, No. 1613, and refers to the valve-chamber and valves. The present invention consists in forming the chamber circular, and in fitting the valves to feathers on a circular plug. A handle is connected to the outside of the plug, whereby the same may be withdrawn in case of need, and whereby the action of the pumps in connexion with the valves may be reversed, that is—the pipe which acted as a suction-pipe may be made to act as a force or delivery pipe, and that which acted as a force may be converted into a suction-pipe.

The invention further consists in making the pumps for donkey-engines double acting. The plunger is formed with a space in the bottom, and a valve is fitted thereto, and on the bottom of the plunger a piston is fitted, which is of the diameter of the barrel, and a foot-valve is fitted in the bottom of the barrel.

This invention also relates to constructing pumps for working presses and other purposes, to be worked by a steam-cylinder, or otherwise. The pumps are placed in direct connexion with the piston-rod, and the valve-motion is so constructed that the engine shall be stopped when the pressure exceeds the working-pressure of the pumps. The pumps are made double-acting, by fitting them with four valves. The barrel of the pump is bored and fitted with a piston, which is fitted on the end of a plunger of so much smaller diameter than the barrel as will leave sufficient space to form the pressure-side of the pump.

3051.—William Dicks, of Floore, Northampton, smith, for "*Improvements in pumps.*" Provisional protection only obtained. Dated Dec. 5, 1861.

According to one arrangement of pump, it is proposed to enclose the barrel inside an air-tight box or chamber, to the upper end of which box or chamber is connected the rising main, whilst the suction-pipe is bolted to a flanged pipe on the bottom of the box. This arrangement affords facility for using a large barrel with a small rising main, and enables the bucket to be readily detached from the bucket-rod and removed from the barrel when requisite for repairs or cleaning, it being simply necessary for such purpose to remove the front of the box which encloses the barrel. The bucket-rod passes down the interior of the rising main, being guided so as to work centrally therein by suitable radial guide-arms, fixed to the rod at proper intervals. The upper end of the rising main has a five-way fitting screwed thereto and the bucket-rod passes out through a stuffing-box screwed into the central vertical nozzle of such fitting, and carries at its upper end a suitable cross-head or guide, which slides vertically between the two vertical arms of a syphon air-vessel, the lower ends of which arms are connected to the two lateral branches of the five-way fitting above mentioned. The sweep, or lever-handle, for working the pump, passes through a slotted eye or fork cast in one piece with the cross-head on the bucket-rod, a slot in the sweep receiving an antifraction roller or pin, carried by the slotted eye or fork. The spout of the pump is connected with the lateral branch which forms the fifth opening of the five-way fitting, and is formed at its nozzle with an external screw-thread to receive the union of a hose-pipe, which is intended to be used when the pump is required as a force-pump. In this case a cock, which is fitted on to the top band of the syphon air-vessel is to be closed, so as to confine the air; but, when the pump is used as an ordinary lift-pump only, then the cock may be opened so as to allow the air to escape.

According to another modification, it is proposed to so arrange the pump that it will lift and force water at the up and down stroke; a piston or plunger, without a valve, being then employed, working in a cylinder or barrel, having lateral passages opening into the rising main, and provided with valves suitably arranged to allow of the proper delivery of the water from the cylinder. In this arrangement, the piston or plunger may be worked by an eccentric, motion being imparted to the eccentric by a hand-wheel, which may be driven either by hand or power.

3052.—James Cochrane, of Harburn, Midlothian, gentleman, for "*Improvements in wet gas-meters.*" Patent dated Dec. 5, 1861.

According to this invention it is proposed to surround the present float of the gas inlet-valve by a partition, so as to separate it from the ordinary water-chamber of the meter, and to insert the lower end of the water-supply pipe into this box or float-chamber, in lieu of into the main water-chamber as heretofore. By this means, the smallest quantity of water which may be fraudulently extracted by a syphon or otherwise through the water-supply pipe, will instantly affect the position of the float, and cause the gas to be shut off without affecting in the slightest degree the proper water-level in the measuring-chamber.

3065.—Heinrich Gottfried Schramm, of 149, Rothenburgsort, Hamburgh, for "*Improvements in rotatory engines and pumps.*" A communication. Patent dated Dec. 6, 1861.

This invention has for its object improvements in rotatory engines and pumps. For these purposes an outer cylinder is employed, with two end covers suitably constructed to receive a shaft or axis through their centres, the passage of the shaft or axis through the covers being made fluid-tight, as is well understsood. On the shaft or axis is fixed a cylinder suitably formed for receiving hinged pistons or valves at its periphery, and on the inner surfaces of one or both covers of the main or outer cylinder, grooves or guides are formed, to draw or move the hinged pistons or valves in towards the cylinder to which they are hinged, and to move them outwards against the inner surface of the main or outer cylinder as required; the valves and pistons being arranged to move into and from recesses in the inner or rotating cylinder. Each valve or piston is hinged or attached to the inner rotating cylinder, at a distance from the recess into and from which it is moved, a curved plate, perforated with holes, being employed for this purpose, one end of the curved plate being hinged to the rotating cylinder, whilst the other end of the plate projects beyond, and is fixed to and forms part of the valve or piston; and it is this end of the curved plate which presses against the inner surface of the main cylinder in order to keep the valve or piston fluid tight. The ends of the pistons or valves work against the end covers of the main cylinder. The curved plate, when its piston or valve is within the recess of the rotating or inner cylinder, fits in a recess formed in the surface of that cylinder, so that, when that part of the cylinder passes in contact with the stop or inner projection which is interposed between the inlet and the outlet-passages, it acts as part of the surface of the inner or rotating cylinder. When used for a rotatory pump, motion is communicated to the shaft or axis, and the pump is furnished with an outlet and an inlet-pipe, the inlet-pipe being in connexion with a suction-pipe, and having a valve in it opening inwards. It is between the inlet and outlet-passages that the stop or projection before mentioned is applied within the outer cylinder. When the engine is to be worked by steam or other fluid, so as to give motion to the shaft or axis, then the steam or other fluid will enter the outlet passage and pass away at the inlet-passage.

3066.—John James Russell, of the Crown Tube-Works, Wednesbury, Stafford, patent tube manufacturer, and Burdett Lambton Brown, of the same place, engineer, in the employ of the said John James Russell, for "*Improvements in apparatus used in the manufacture of taper tubes.*" Patent dated Dec. 6, 1861.

This invention has for its object improvements in apparatus used in the manufacture of taper tubes. For these purposes the discs used when drawing tubes are so constructed and worked that the diameter of the dies is constantly varying, as a tube is drawn through them. The dies may either consist of two grooved rollers, or two grooved sections of rollers, the grooves being made wider at one end than the other, and gradually diminishing from the widest end to the narrowest end. These dies are made to work progressively, so as continually to present a different section of opening, whilst the tube is drawn through such varying opening at a speed greater than the surface-speed which is given to the rollers, or to the section of rollers, in which the grooves are made. The rollers or section of rollers are geared together, or worked in such manner that the groove of one is kept correctly to correspond with the groove in the other.

The arrangement of draw-bench or machinery used for drawing the tubes through the dies may be varied, and the means of giving motion to the dies may also be varied, care being observed, in all cases, that the extent moved through by the drawing apparatus, during the time that the dies are changing from one diameter to another, shall represent the length of the tube; whilst the movement or change of the die shall represent the larger and smaller diameters of the length of tube drawn during the time the changing of the diameter of the dies has escaped. It may, however, be stated that when it is desired that a tube should for any purpose consist of a length of cylindrical tube, in connexion with a length of tapering tube, such a result may be obtained by preventing the dies from changing, whilst the desired length of cylindrical tube is drawn through them; and then, where the tapering part of the length of tube is to be produced, a slow surface-motion is to be given to the dies (as compared with the motion or speed of the drawing machinery); so that, whilst drawing the tapering part of the tube, the diameter of the opening through the dies may be changed, so that at the commencement the die shall represent the diameter of the tube at that end, and, when complete, the die shall represent the diameter of the other end.

APPLICATIONS FOR LETTERS PATENT.

2453.—Herbert William Hart, of Fleet Street, London, E.C., engineer, for "*Improvements in argand and other burners.*" Sept. 5, 1862.

2457.—William Edward Newton, of 66, Chancery Lane, London, W.C., civil engineer, for "*Improvements in lamps.*" A communication. Sept. 5, 1862.

2458.—Sidney Hopton Hadley, of the City Mills, Upper Thames Street, London, E.C., for "*An improved process for manufacturing gas for illumination.*" Sept. 5, 1862.

2461.—Jacob Snider, jun., of Pennsylvania, U.S.A., late of Paris, now of 51, Dorset Street, London, W., for "*A new and useful method of increasing the durability of, and for preserving, cloths and other like fabrics used for sails, tarpaulings, tents, and other coverings; also all kinds of ropes, and cables and telegraph wires; also all woods, metals, and other materials used in buildings or constructions on land or on water; and all objects exposed to the action of acids, alkalis, gases, fire, fresh or salt water, atmospheric, or other like destructive influences, by the application of graphite.*" Sept. 6, 1862.

2470.—James Stead Crosland, of Ashton-under-Lyne, Lancashire, engineer, for "*Improvements in the manufacture of tubes made of copper, and of copper combined with other metals.*" Sept. 8, 1862.

2489.—Joseph Vigouroux, of Nismes, France, metal founder, for "*An inoxydable white metal suitable for making taps or cocks, and other useful articles.*" Sept. 10, 1862.

2522.—Henry James Lewis, of Birmingham, engineer, for "*Improvements in engines to be worked by means of water.*" Sept. 13, 1862.

2525.—Thomas William Cowan, of the Kent Iron-Works, Greenwich, engineer, for "*Improvements in the construction of portable or fixed pumps.*" Sept. 16, 1862.

2542.—William Clark, of 53, Chancery Lane, London, for "*Improvements in the treatment of peat, and peat-tar for the production or manufacture of various products.*" A communication. Sept. 16, 1862.

2554.—George Haseltime, of 100, Fleet Street, London, for "*Improvements in apparatus for the manufacture of gas from petroleum oil and water, or from cannel coals, bituminous coals, schist, tar, crude coal-oil, or other hydrocarbons and water.*" A communication. Sept. 17, 1862.

2555.—John Henry Johnson, of 47, Lincoln's Inn Fields, London, for "*Improvements in gas-burners.*" A communication. Sept. 17, 1862.

2560.—William Herbert Browne, of Theobald's Road, and Henry Armstrong, of Manchester Street, London, gas engineers, for "*Improvements in dry and wet gas-meters.*" Sept. 18, 1862.

GRANTS OF PROVISIONAL PROTECTION.

2212.—François Henry Marie Côme Damiens Chevalier De Fenis de Lacombe, of Paris, for "*Improvements in the means of lighting towns or other localities, and of ventilating, warming, and providing the same with water.*" Aug. 7, 1862.

2252.—John Ramsbottom and George Hacking, of Accrington, Lancashire, for "*Improvements in machinery or apparatus for measuring and registering the flow of water, and other fluids.*" Aug. 12, 1862.

2286.—George White, of Torquay, Devonshire, plumber, Francis Buckland, of Newton Abbott, in the same county, auctioneer, and Charles Rees, of Newton Bushel, in the same county, accountant, for "*Improvements in the manufacture of water-closets.*" Aug. 14, 1862.

2300.—Anne Shepard, of 55, Victoria Street, Westminster, London, S.W., for "*Improvements in obtaining light, and in apparatus connected therewith.*" Aug. 15, 1862.

2385.—Joseph Kitchin, of Liverpool, Lancashire, ventilating engineer, for "*Improvements in ventilators.*" Aug. 28, 1862.

2390.—Elizabeth Lachenal, of Little James Street, Bedford Row, London, W.C., widow and executrix of Louis Lachenal, for "*Improvements in gas-meters.*" A communication. Aug. 28, 1862.

2391.—William Husband, of Hayle, Cornwall, for "*Improvements in water-valves.*" Aug. 28, 1862.

2421.—William Clark, of 53, Chancery Lane, London, for "*Improvements in the means of obtaining light and heat, and in apparatus for the same.*" A communication. Sept. 1, 1862.

2424.—David Bruce Peebles, of Edinburgh, Mid-Lothian, N.B., engineer, for "*Improvements in wet gas-meters.*" Sept. 2, 1862.

2426.—William Hunt, of Tipton, Staffordshire, manufacturing chemist, for "*An improvement or improvements in the manufacture of muriate of ammonia.*" Sept. 2, 1862.

2430.—William Roberts, of Millwall, London, E., for "*Improvements in apparatus for regulating the amount of water discharged by a pump, chiefly applicable for regulating the amount of water thrown by a steam fire-engine, or for regulating the amount of water fed to a steam-boiler.*" Sept. 2, 1862.

2453.—Herbert William Hart, of Fleet Street, London, engineer, for "*Improvements in argand and other burners.*" Sept. 5, 1862.

2458.—Sidney Hopton Hadley, of the City Mills, Upper Thames Street, London, for "*An improved process for manufacturing gas for illumination.*" Sept. 5, 1862.

2470.—James Stead Crosland, of Ashton-under-Lyne, Lancaster, engineer, for "*Improvements in the manufacture of tubes made of copper, and of copper combined with other metals.*" Sept. 8, 1862.

2489.—Joseph Vigouroux, of Nimes, France, metal-founder, for "*An inoxydable white metal suitable for making taps or cocks, and other useful articles.*" Sept. 10, 1862.

NOTICES TO PROCEED.

1234.—Herbert William Hart, of Higher Broughton, Manchester, Lancashire, for "*Improvements in the manufacture of reflectors and shades for gas and other lights.*" April 26, 1862.

1256.—William Little Tizard, of Mark Lane, London, E.C., engineer, for "*Improvements in heating, cooling, and condensing apparatuses.*" April 29, 1862.

1284.—Henry Willis, of Albany Street, Regent's Park, London, N.W., organ-builder, for "*Improvements in valves for the supply and discharge of gaseous bodies.*" April 30, 1862.

1311.—Jean Marie Herdevin and Joseph Alexandre Jullien, ingénieurs, 13, Rue Gaillon, Paris, for "*Improvements in sluice-cocks.*" May 3, 1862.

1332.—Christopher Binks, of Parliament Street, Westminster, for "*Improved methods of obtaining hydrogen gas, and certain gaseous compounds of hydrogen and carbon.*" May 5, 1862.

1358.—Eugène Bourdon, of Paris, mechanical engineer, for "*Improvements in the construction of blowing-fans, which improvements are also applicable to centrifugal pumps for raising water and other liquids or gases, or for exhausting the same.*" May 7, 1862.

1385.—Leo De La Peyrouse, of 13, Panton Square, London, manufacturer, for "*Improvements in treating neutral and acid, fatty, or oily substances, and compounds or products containing paraffin.*" May 8, 1862.

1404.—Robert Moore, of Cannon Street West, London, engineer, for "*Improved apparatus for indicating the presence, position, or accumulation of liquids, gases, or vapours, and apparatus for preventing danger or damage consequent thereon.*" May 10, 1862.

1443.—William Clark, of 53, Chancery Lane, London, for "*Improvements in apparatus for generating motion in fluids, applicable for raising and forcing water, propelling, and otherwise in the distribution of motive power.*" A communication. May 13, 1862.

1722.—Arthur John Joyce, of Cambridge Terrace, gentleman, for "*Improvements in lighting and heating.*" June 9, 1862.

1940.—William Mattieu Williams, of Handsworth, Staffordshire, teacher, for "*Improvements in apparatus for the distillation of coal and peat, and such other substances as are or may be used for the manufacture of solid and liquid volatile hydrocarbons.*" July 3, 1862.

2267.—John Cooper, of Town Malling, Kent, plumber, for "*Improvements in valves and buckets for pumps, and in valves or cocks for other uses.*" Aug. 13, 1862.

PATENTS WHICH HAVE BECOME VOID

BY REASON OF THE NON-PAYMENT OF THE ADDITIONAL STAMP DUTY OF £50 BEFORE THE EXPIRATION OF THE THIRD YEAR.

1981.—Robert Beverley, "*Improvements in wet gas-meters.*" Aug. 31, 1859.

2052.—John Henry Johnson, "*Improvements in cocks and valves.*" Sept. 8, 1859.

2055.—Thomas Webster Allsopp, "*Improvements in portable gas apparatus.*" Sept. 8, 1859.

2068.—William Ross, "*Improved apparatus connected with the discharge of liquids.*" Sept. 10, 1859.

2072.—Marc Antoine François Mennons, "*An improved arrangement of piston-packing, principally applicable to hydraulic apparatus.*" Sept. 12, 1859.

2073.—Marc Antoine François Mennons, "*Improvements in the construction of hydraulic pumps.*" Sept. 12, 1859.

PATENTS WHICH HAVE BECOME VOID

BY REASON OF THE NON-PAYMENT OF THE ADDITIONAL STAMP DUTY OF £100 BEFORE THE EXPIRATION OF THE SEVENTH YEAR.

1909.—Joseph Gilbert Martien, "*Improvements in preparing certain oxides of iron for use, and for apparatus to be employed therein.*" Aug. 23, 1855.

1943.—Charles Esplin, "*Improvements in apparatus for regulating the supply of gas.*" Aug. 27, 1855.

2071.—Abram Longbottom, *Improvements in the manufacture of gas, when oils or fatty matters are used.*" Sept. 13, 1855.

Legal Intelligence.

THAMES POLICE COURT.

THURSDAY, SEPT. 4.

(*Before Mr.* SELFE.)

CONVICTION FOR GAS-STEALING.

George Wallis, of No. 16, St. Leonard's Road, Bromley, florist and gardener, was charged with stealing 500 cubic feet of gas, the property of the Commercial Gas Company.

Mr. Tindal Atkinson, barrister, conducted the case for the prosecution; and the prisoner was defended by Mr. Hubert Wood, a solicitor.

Mr. Tindal Atkinson said the offence charged against the prisoner was as clear a case of larceny as ever came under his notice; but he would leave the magistrate to decide whether the prisoner should be committed for trial, or whether it would be well to dispose of the matter summarily, under the Act of Parliament. The learned counsel said the prisoner had been a customer of the Commercial Gas Company for several years; and, in 1859, he owed them £1. 11s. 11d., for gas supplied, which he was unable or unwilling to pay; and, in consequence of non-payment, his gas was cut off. Previous to the supply being stopped, the prisoner burned gas in his shop, which was near to his nursery-grounds. After giving an outline of the case, as detailed in the evidence, Mr. T. Atkinson referred to the various clauses in the Act of Parliament, relating to the offence committed by the prisoner.

Mr. *W. Inkley*, one of the inspectors of the Commercial Gas Company, deposed that, on the 22nd ulto., he went to the prisoner's house, about nine o'clock in the evening, and saw the room behind his shop illuminated. He observed to the prisoner, who was very uneasy, "Why, Mr. Wallis, you are burning gas;" to which he replied, very coolly, "Yes, I am." Witness said, "How do you get it; where from?" Wallis said, "From the cellar—down below." Witness inquired of the prisoner if the gas burned in the house passed through a meter. The prisoner said, "No, certainly not." In answer to other questions, he said he obtained his gas from the Commercial Gas Company's main, and that he gave himself authority to use it. Witness then borrowed a light of the prisoner and went into the cellar, where he discovered that, by an ingenious but clumsy contrivance, the prisoner had managed to supply himself with gas from the company's main service-pipe. The meter which indicated the supply of gas consumed formerly stood in the prisoner's shop, and it was removed when the supply of gas was cut off. The service-pipe ran up with a bend through the flooring of the prisoner's shop. The prisoner had removed a short piece of tubing; and, to lull suspicion, left the pipe standing through the floor. He removed the short piece or cap over the service-pipe, which effectually cut off the supply of gas to the house, inserted a small pipe with a cork at the end, which was put into the service-pipe where the upright pipe had been disconnected. It was so communicated that gas passed through to a burner in the back room. The prisoner could have conveyed gas to any part of the house.

Cross-examined by Mr. Wood: The prisoner admitted his liability to pay £1. 11s. 11d. before his gas was cut off. There was a dispute about the consumption of gas on a previous meter. The gas might have been cut off so effectually as to prevent the prisoner obtaining a surreptitious supply.

Mr. *Charles Buckingham*, an inspector of the Commercial Gas Company, corroborated the evidence of Mr. Inkley in every particular, and added that he had frequently seen a glare of light in the prisoner's back room. It was more than would have been caused by ordinary candles or oil-lamps.

Mr. *Edward Shard* said he cut off the prisoner's supply of gas in the usual manner three years ago, and left an iron cap screwed in tight at the end of the service-pipe. That had been since removed. Considerable force must have been used, and gas-fitters tools brought into operation, to remove the cap. He saw gas burning in the defendant's house four nights in August.

Lewis Lambert, a police-constable, 311 K, said that he took the prisoner into custody, and that he believed gas had been surreptitiously burned in his house for the last twelve months.

Mr. Hubert Wood said the Commercial Gas Company had left a temptation in the prisoner's way, and ought to have cut off the gas in such an effectual manner as to have prevented the possibility of his obtaining any from their service-pipe.

Mr. Selfe said that was no excuse at all. The prisoner, or any one else, could if so disposed, obtain gas from the company's main-pipes running under the roads and streets of the metropolis. The prisoner would not pay the arrears owing to the Commercial Gas Company, and the supply of gas was very properly cut off. There was no hardship in the case at all as regarded the prisoner. The hardship was on the gas company. The prisoner had displayed considerable art, and was a very dishonest fellow. The surreptitious burning of gas had been going on at least for several months; but formal proof of four days only had been given. He fined the prisoner £5., and £8 more, or 40s. per day for four days the gas had been surreptitiously used and burned—making in all £13.

On the application of Mr. HUBERT WOOD, the prisoner, not being provided with the money, entered into sureties to pay the penalty on the following Thursday.

FRIDAY, SEPT. 19.

Mr. *Inkley* attended before the magistrate this day, and stated that the penalty inflicted upon the prisoner had not been paid.

Prisoner said he had £3; and he was willing to pay that sum.

Mr. SELFE: Indeed, I will not allow the matter to be compromised in that manner. Your solicitor asked for a week's grace, to enable you to raise the money. It was granted; and you came here last week, and prayed for further time. Unless you pay the £13, a distress-warrant will be made out at once. You have been treated too leniently; I could have dealt with you much more severely. Have you the money?

Prisoner: No; I have not.

Mr. SELFE: Then, let a distress-warrant be issued; and, if there are not sufficient goods to satisfy the warrant, I shall inflict a sentence of three months imprisonment. The defendant must enter into sureties to appear here again next Thursday.

BURSLEM DISTRICT COUNTY COURT.

THURSDAY, AUG. 21.

(*Before* F. RUSSELL, *Esq., Deputy-Judge.*)

RATCLIFFE *v.* THE BURSLEM GAS COMPANY.

Mr. A. TENNANT appeared for the plaintiff, and Mr. SUTTON for the defendants.

In this action, which was one of a peculiar character, the plaintiff, a grocer and provision dealer, residing at Burslem, sued for the recovery of a sum of 14s. 9d., paid to the gas company under the following circumstances:—In the month of November last, he entered upon the occupancy of a house of his own at Dalehall, which had previously been tenanted by a man named Robert Kelsall, whose goods had just been sold under a bill of sale. This Kelsall had a debt owing to the gas company of 13s. 9d., which they afterwards applied to the plaintiff to discharge; and, because he declined doing so, cut off the gas from the house on the 22nd of July, and charged him another 1s. (making 14s. 9d., the amount sued for) for this operation, which, of course, resulted in a deprivation of light. Upon this, under protest, and with a distinct declaration that he should apply for the recovery of the money through the county court, he paid the amount left due by Kelsall, and the additional 1s.

Mr. *Ratcliffe*, in his evidence, said he bought the gas-fittings at Kelsall's sale, but never undertook to pay his gas account, and had received no consideration whatever from him.

Mr. *Kelsall* said that Mr. Ratcliffe had had between 5s. and 6s. worth of shop-fixtures from him, on the understanding that, in lieu, he was to pay the gas bill.

Mr. *Henry Woodall*, clerk to the gas company, said the plaintiff, on the day of Kelsall's sale, promised to pay the gas account, on a threat being held out of the gas being otherwise cut off.

William Cross, another servant of the company, said that when he presented the bill to the plaintiff, he refused to pay.

So far the evidence went, in substance, except that it may be added the gas was charged at the usual rate of 4s. 6d. per 1000 cubic feet. There were two legal questions connected with the case—first, whether the company, under the local or general Acts relative to gas, had a right to cut off the gas at all, under the circumstances? and, second, whether by doing so, they had not, as his Honour termed it, used "a circuitous mode of obtaining more than their due"—viz., by making one man pay another man's gas account.

Mr. SUTTON, for the defendants, contended that the company had acted strictly within their legal powers.

Mr. A. TENNANT argued to the contrary.

A long discussion between those gentlemen and the judge ensued. Finally,

His HONOUR said, he would take a little time to consider his opinion on the matter, and would give judgment on the following day, at the Tunstall court.

TUNSTALL COUNTY COURT—FRIDAY, AUG. 22.

His HONOUR gave judgment to-day, and said: In this case, the plaintiff sought to recover a sum of money which he had paid, under protest, to the gas company. It appeared that a person named Kelsall occupied a house as tenant to the plaintiff, which he left on the 18th of November last, owing to the company 13s. 9d. for gas-rent. Plaintiff gave the company notice that Kelsall was going away. According to the statement of the officers of the company, the plaintiff then agreed to pay this 13s. 9d. if the gas was not cut off from the house. Plaintiff denies that he ever made any such promise. But it is immaterial to decide whether he did, for, if there was such a promise, the debt was null and void by the Statute of Frauds, from not being in writing. The gas was not then cut off. After a few months, the plaintiff himself occupied the house, and paid all that was due for the quarter ending the 31st of March, in respect of the gas consumed by himself. He continued to use the gas, and the company supplied him with it till the 22nd of July. During the plaintiff's occupation, repeated applications were made by the servants of the company for the payment of the 13s. 9d.; and notice was given that, if he did not pay, the gas would be cut off. The plaintiff always refused to pay. At last, on the 22nd of July, the company cut the gas off, because the plaintiff refused to pay this sum. On this being done, the plaintiff paid the amount, under protest, saying that he would take legal proceedings, to see if they had a right to make him pay it. He also paid 1s. for putting the gas on again. Since then, the company have supplied him with gas, and he has consumed it as before. Under these circumstances, the question is whether the plaintiff is entitled in law to recover back the amount paid. As a general rule, if a person, under no misapprehension as to the facts, chooses to pay a demand which would not be enforced at law, he cannot recover it back again. But, if money is illegally extorted by any oppression or duress, an action will lie to get it back again. In this case, it is contended by the plaintiff that the company were not justified in law in enforcing a contract, supposing there to be one, by which the plaintiff bound himself to pay 13s. 9d., besides the 4s. 6d. per 1000 feet, that being a sum in excess of 1000 feet, the utmost price which the company were by their Act entitled to demand; and recently, he urged that the cutting off of the gas was such a duress upon him that he was forced to pay the 13s. 9d., and had no free choice in the matter. After some consideration, I have come to the conclusion that there was no such duress upon the plaintiff as to render this payment a compulsory one, in point of law, so as to enable him to recover it back. It is true the gas company has a practical monopoly in the supply of gas, and that to have the gas cut off is a serious annoyance to any householder; but I cannot find it is illegal for the company to cut it off. The case *Hazlewood v. the Hoddesdon Gas Company* (28, L.J.C.P. 268), shows that, in ordinary cases, a gas company is not bound to continue to supply gas longer than they choose, any more than a tallow-chandler is bound to supply candles. The sections 16 and 17 of the Gas Clauses Act, indeed, seem to contemplate that the company will continue to supply until there is a neglect to pay the gas-rent; and authorizes the company, in such a case, not only to cut off the supply, but also to make the defaulter pay the expenses of cutting it off. But neither the Act nor the special Act contains words sufficient in my opinion to impose on this gas company so important an obligation as to continue to supply gas till default is made in payment, or for any specified period. If this is an oversight in framing the special Act of the company, or if they abuse this liberty left to them, then application must be made to the Legislature to impose proper terms upon them. Putting the case most favourably for the plaintiff as the law now stands, the company are in the position of a tradesman, who might say to the plaintiff, "I will supply you with no more goods until you pay me an illegal demand, as for instance money won at gambling." If the plaintiff chose to pay the gambling debt he would not recover it back from the tradesman, though, if he had refused, the tradesman could not have made him pay it. On the same principle then, even if it was an illegal contract that the plaintiff should pay 13s. 9d., in addition to 4s. 6d. per 1000 feet for the gas; if it was one that could not be enforced by the company, as to so much of the money as has not been paid, about which I say nothing; still, as to the money which plaintiff has paid, as I presume, under no duress or compulsion, in contemplation in law, I think the plaintiff cannot raise a question as to the illegality of the contract in this action, and the judgment must be for the defendants. Entertaining, however, much doubt as to the legality of the contract by which the company put upon the plaintiff the payment of a debt of his former tenant, and still more of the fairness and propriety of their doing so, when by their own notice they intimate that an in-coming tenant will not be responsible for the arrears of the out-going tenant, if notice of the change of tenancy be given, I think that the defendants ought not to have any costs.

Miscellaneous News.

UNITED GENERAL GAS COMPANY.

The Ordinary Half-Yearly Meeting of the Proprietors of this Company was held on Tuesday, Sept. 9, at the Offices of the Company, Austin Friars, London—E. BURMESTER, Esq., in the chair.

The SECRETARY read the notice convening the meeting, the accounts, and the following report:—

This half-yearly general meeting has been convened in compliance with the provisions of the company's charter. By the statement of the last half year's operations, it will be seen the profits amount to £5634, as compared with £5048 for the corresponding period of last year.

At Dublin, both the rental and the profits have increased; but, owing to the falling off in the price of coke, and to a very heavy and serious addition to the local taxation, as well as to the large amounts which it has been deemed advisable and right to charge, under the heads of wear and tear and meter redemption, against the half year's earnings, the increase of the profits is not so large as it otherwise would have been. The additional taxation above referred to has arisen from a mode of assessment by which the demand on the company has been materially increased; this assessment will be appealed against next November.

Extensions of mains continue to be made, both in the Dublin and Kingstown districts, to meet the growing demand for gas in quarters where it has not been previously introduced. Much attention has been paid to the examination and improvement of the old mains and services, &c.; a diminution in the wastage of gas has already resulted, and the best energies of the staff at Dublin are directed to this vital point. Further portions of the plan of alterations and improvements to the plant at the works, have been carried out; all this has added considerably to the charge for wear and tear.

At Limerick the rental has increased, and an improvement taken place in the sale of products; the alterations to the plant have resulted in better workings, and the examination of the mains, &c., in a decreased wastage of gas.

It has been considered proper to close the stations contingency account, and to transfer an amount standing to the credit of profit and loss of £10,000 to investment account.

Your directors recommend the proprietors to declare a dividend of 11s. 6d. per share, free of income-tax, out of the profits of the past half-year, and the balance, £459. 5s., to be carried to the dividend reserve-fund.

Three of your directors, Mr. Burmester, Mr. Hudson, and Mr. Wheeler, and Mr. Smyth one of your auditors, go out of office this day by rotation, and, being eligible, offer themselves for re-election.

After the general meeting, a special meeting will be held to fill up the vacancy in the auditorship in the room of J. O. Hanson, Esq.

The CHAIRMAN expressed his regret at the absence of Mr. Hudson through illness, and explained that he had been called upon, at a very short notice, to preside. He then proceeded to say, the proprietors would no doubt observe that there was a marked improvement in the accounts, because the company had earned more, and done it with less coal. It was, however, matter of regret that there had been a diminution in the price of coke; and the taxation of the company was very heavy, but the company intended to appeal against it, and hoped they would obtain redress. The works of the company were in an efficient condition; but, in consequence of the large expenditure during the past half year, the directors were unable to recommend a larger dividend than they had proposed. The net profit for the half year was £5634. The new meters in Dublin, for fresh customers (which had been paid for during the last six months, and charged against its working), had cost £1100. The wear and tear also had borne £1000 more than strictly belonged to it, as there was no capital from which to take it: and the additional rating had actually amounted to no less a sum than £700. These three additional charges had seriously affected an account which had for years felt, and still laboured under, the effects of a public lamp contract, at a price unprecedentedly low. It was to be hoped that this last-mentioned matter would be put on a more satisfactory basis at the end of the contract. The chairman concluded by moving the adoption of the report and accounts.

A PROPRIETOR inquired the price received for public lamps.

Mr. WHEELER replied that, for eighteen years, the company had received

£3. 18s. per lamp per annum, for which sum they lighted, extinguished, cleaned, painted, and kept the lamps in repair, besides furnishing lamp-posts and fittings.

Mr. RHODES seconded the motion for the adoption of the report, and inquired of Mr. Sanders (from Dublin) what had been expended on the works since the present engineer was appointed?

Mr. SANDERS said, he was not prepared to answer the question.

The CHAIRMAN said that, during the last three years, £46,000 had been expended.

Mr. SANDERS said, he could tell Mr. Rhodes that, in 1849, the establishment in Dublin was not capable of manufacturing more than 800,000 or 840,000 feet of gas per diem. They could now manufacture 2 million per diem. In 1849, they had storeage for 400,000 feet; they could now store 1,600,000. In 1849, the supply of gas per year was about 164 million; in 1861, the supply was 264 million.

Mr. RHODES inquired who looked to the receipt and payment of moneys in Dublin, the board of directors being in London?

Mr. SANDERS replied that no money was expended without his signature being first obtained; and he checked every collector's account, which frequently occupied him many hours in the course of a day. No consumer was ever threatened with the removal of his gas for non-payment, without his sanction. The bad debts during the past half year were exceptionally heavy, being £700; but the average was about £340.

Mr. H. P. STEPHENSON considered it was not a fair principle to charge new meters to revenue.

Mr. WHEELER differed with Mr. Stephenson, and wished every gas company's account was in as sound a condition as that of the United General Company.

The motion for the adoption of the report and accounts passed.

Mr. R. M. CHRISTIE rose to move the following resolution—"That a committee of consultation be appointed to ascertain whether any, and if any, what steps can be taken to improve the working of the company; such committee to consist of four directors nominated by the board, and four shareholders, viz., Messrs. Warren, Garraway, Stephenson and Christie, with power to call for all books and information, and to report at the next half-yearly meeting." He said he had gone very carefully into the accounts, and should like to give the meeting the result of his observations. They were a large company, with £50,000 or £60,000 gas-rental, and the shareholders were told that they ought to be satisfied with a half-yearly profit of £5600. There was not a company in London, or anywhere else scarcely, where such an anomalous state of things existed. The profits of a paltry provincial gas company would at least be double, and he thought the proprietors were entitled to ask for some further explanation. At the last meeting, Mr. Stephenson introduced to the shareholders the fact that the whole of the companies supplying the towns north and south of Dublin, and likewise those towns contiguous to the Channel, were paying from 7 to 10 per cent. dividend; whilst their shares were from 10 to 50 per cent. premium. The Dublin Alliance, in the same town, and under the same circumstances, was paying 7½ per cent.; their shares were at a considerable premium. There was nothing peculiar in the United General Company but its large capital; and he should differ with Mr. Wheeler in wishing that the accounts were the same in other companies. He should not like to see the London gas companies generally in the same state. At the meeting last half year, he (Mr. Christie) showed the shareholders that, with respect to the working, the United General compared very unfavourably with every other company that he was acquainted with. If the United General had been as well worked as the Dublin Alliance, in six months they would have been able to save over £5000. Had the United General been worked as well as the Phœnix, and some other London companies, they would have saved £9000 in six months. Were not these figures enough to startle the body of proprietors? He expected, when such extraordinary statements were made at a meeting, that the gentlemen sitting on the other side of the table would have been able to show some reason for that extraordinary position of the company; whereas the only statement which was then given by Mr. Wood, was, that the company had appointed a gentleman of large manufacturing experience. When that statement was made, he (Mr. Christie) was led to believe that the gentleman appointed had the management of the works at Dublin and at Limerick. He did not know whether that were so or not; but he should like to ask whether the company's engineer had the proper control over the works, which an engineer ought to have, and whether he had the proper control over the mains? It was the duty of the board to give the new officers every possible power to see what they could do for the company. He trusted the new engineer would have a large amount of power; and, if he did not come up to the board's anticipations, then, of course, they must get another. Mr. Wood, on the last occasion, pointed out a difficulty in the way of the company, namely, its want of capital. But, upon looking to the accounts, he (Mr. Christie) found that the company had £8000 in India Bonds at 4 or 5 per cent.

Mr. WHEELER stated that the India Bonds would soon have to be sold to pay the dividend.

Mr. CHRISTIE would ask whether there was no possibility of borrowing money instead of allowing their property to be so seriously depreciated for want of capital? The directors and shareholders ought to devise some means of getting capital to extricate them from so extraordinary a position. looking at the balance-sheet, and hearing the directors report, he was rather pleased. He found that they had saved a considerable amount in coals, and had a gas-rental equal to the last within £600. The shareholders, therefore, might be reasonably satisfied that there had been a considerable improvement in mains and services. But, looking a little further at the account, he was sorry to find that the company was disadvantaged this half year in the products to the extent of £461. That was very unsatisfactoy. Then, as to the wages. They were generally inclined to think that the wages should be dependent upon the amount of work done; but what was the fact? Last half year they consumed 20,400 tons of coal, and the present half year 19,800 tons, and yet, instead of the wages being less, they were £390 more. The item of wear and tear was dealt with in the most extraordinary manner—just as the meters were dealt with. No one could tell what was capital, and what was revenue. They ought to have a wear and tear account; and, if the works were depreciated £5000 or £6000, write that sum off. Then the salaries and sundries increased, as the bad debts had increased, £407. The local manager, Mr. Sanders, had given the meeting some explanation; but was it not extraordinary that they should all at once find they had £400 or £500 bad debts which they did not know of? The next item was gas-meter redemption. Who ever heard of new meters being put to revenue account? His own conclusion was that the present accounts did show symptoms favourable to the company, but they showed likewise a very bad state of book-keeping, and the sooner it was revised the better. Three or four years ago, the United General sold the Cork works to the Cork Consumers, and what had been the result? The Cork Consumers Company, with a double set of mains, paid their shareholders a dividend at the rate of 12 per cent. Why should not the United General do the same? He believed they could by taking down all their old works, and doing away with all their old mains and services. He hoped that the meeting would be unanimous in passing the resolution which he had proposed.

Mr. GARRAWAY seconded the motion, because he believed that, if carried it would be beneficial to the company. He had had many years experience in gas companies, and there were two or three golden rules which it would be well to bear in mind. If they analyzed the accounts of companies that were only moderately well conducted, and were paying anything over 5 per cent., they would find that, if the profits were one-fourth of the income, they were doing well. There were some companies who were making a profit of a third of their income, which enabled them to pay 6, 7, 8, or 9 per cent., according to the amount of capital. He found, upon analyzing the profit and income of the United General Company for the past year, that the proportion of profit compared with income was about one-sixth. The company was very rich in consumption compared with extent of main, and there was no reason why it should not have the same proportion of profit as other companies. If one-fourth was profit, it would enable the directors to declare a fair rate of interest for the holding which the proprietors had in the company—that was, 5 per cent. Year after year large sums of money were laid out to increase the company's income, but they did not arrive at those results which in all other companies showed themselves immediately. The price for the public lamps was no doubt against the company, but, as they had increased the consumption from 840,000 feet per diem to 300 million feet of gas per annum, that should show itself in increased profit, but the reverse was the fact. He did not see why the company should not borrow money at 3 per cent., as some other companies did, in order to counterbalance their want of capital, and he hoped Mr. Christie's motion would be unanimously carried.

Mr. WARREN supported the motion.

Mr. RHODES reminded the proprietors, that for years the United General had been working up hill; they had now nearly reached the summit; and he did not think that new shareholders should now step in and take the credit of it. He should, therefore, support the directors.

Mr. GODFREY, as a large shareholder, would rather trust the directors, whom he had long known and tried, than those who had recently come into the company, and might possibly have other objects to serve. He considered that no case had been made out for a committee of consultation. The United General had been compared with other companies, and reference had been made to the Cork Consumers. But, it seemed to be forgotten that the Cork Consumers Company purchased our works for about half their original cost. What Mr. Christie proposed should be done by a sort of earthquake—pulling down the old works and erecting new ones—the directors were doing steadily and cautiously. There was already an increased rental of £1800, and the present was a very unfit time for interference with the action of the board. He should, therefore, oppose the motion.

A PROPRIETOR would support the motion.

Sir CHARLES D. CROSLEY would also support the motion, not because he had not confidence in the directors as men of honour—because he believed them to be men of the highest integrity, men whose character no one could impugn—but he desired a little investigation.

Mr. WOOD said that in comparing the United General with other companies "in London and Dublin, and north and south of Dublin," one very great oversight had been committed. In comparing the United General even with the Dublin Alliance alone, the same oversight had been made The United General had a contested district; and not only so, but they had the whole of the public lighting at a very low rate indeed. That those circumstances did affect companies, the correspondence which took place at the time that the largest London company had to do with Marylebone, clearly showed. When the Imperial Gas Company had the monopoly at Marylebone, they lighted the public lamps for £3. 11s., but, when the parish elected that they would allow other parties to come in and compete for the private lighting, the Imperial Company, instead of £3. 11s., estimated the just charge at £4. 8s. 6d., and this difference was agreed to by the parish for the same lighting. Hence it will be seen that the comparisons instituted with £3. 1s. 8d. for the public lamps did not give a fair chance to the United General, and therefore he hoped the meeting would not be carried away with mere figures As to the question of general superintendence, he would state that Mr. Romans had, both at Dublin and Kingstown, the whole superintendence both of the works and mains, and, at Limerick, the company had had the benefit of his advice, whilst the alterations which had been been made there had been made from Mr. Romans' own drawings. He would further state that, when it was thought advisable to put the carbonizing into the hands of one person, who should be personally responsible for the same, the directors did their utmost to select, from the candidates who presented themselves, the person most fit; and the representations which they received of the antecedents and character of the gentleman whom they did select, were such that they thought they could not be wrong in taking him. If that gentleman (Mr. Romans) were present, he would bear him (Mr. Wood) out, in stating that his advice and assistance had been asked and acted upon on all occasions. If he had been checked in any matter, it was only when the means at the directors command were insufficient. The directors had personally conferred with Mr. Romans in Dublin and in London, and were doing all in their power to carry out his plans. They could not eradicate all their old mains and works, as suggested by Mr. Christie, for the simple reason that they had not the money necessary to reinstate them. As to borrowing money at 3 per cent., according to Mr. Garraway's advice, the solicitor would tell the proprietors that the directors had no power whatever to raise money at any rate of interest, as they had no security whatever to give by their charter. As to the £8000 in India Bonds, the whole of that sum would be required before November; for the proprietors must remember that, in order to get coals of a proper quality, at a reasonable price, at the time required, the directors were obliged to have something like 20,000 tons of coals in store in the beginning of November. Where, he would ask, were they to get the money to pay for that stock? The India Bonds must and would be used towards it. He quite agreed with the honourable proprietor who said, "Let 'wear and tear' be 'wear and tear,' and 'depreciation' be 'depreciation.'" There were gentlemen present who knew that no one was a greater advocate for that system than himself. For many years, that had been a hobby of his, and he should be only too glad to see it carried out in every company: but the want of new capital to meet the actual increase of business compelled him in this instance to modify his views, and rendered it necessary to supply the required means from the only available source—viz., present earnings, instead of from capital. He was obliged to those

gentlemen who had found fault where fault could be found; but he could assure the proprietors that the very points which had been referred to had been under the careful consideration, and was receiving the attention of the board and their officers. In conclusion, he hoped that Mr. Romans would have time given to him fully to test the alterations which had been made under his advice, and that he should not be judged by the result of workings whilst the alterations were incomplete.

Mr. G. ANDERSON said that while he did not wish to be understood as opposing the committee of consultation, he did not think much good would result from it; because, whilst the gentlemen who had spoken had been running round the hedges, none of them would jump into the gap. The sore place was in the retort-house; and, if they had a good carbonizing account, and an ordinary wear and tear account, they would have a good dividend. He knew the Dublin works well, and had been over them several times. There was no doubt that a good deal of alteration had taken place there, and large sums of money had been expended; but the question which he trusted the directors would take into their serious consideration was, whether, looking at the results, the alterations were really an improvement? He knew Mr. Sanders, and could testify to his zeal and assiduity. He could also say that Mr. Sanders was a gentleman very highly respected in the city of Dublin. Mr. Anderson then compared the results of the workings at Dublin with those at Clonmel and Dover, and showed that the comparison was unfavourable to the United General.

The motion for the appointment of a Consultation Committee was then put, when there appeared—For the motion, 23; against it, 13.

Mr. CHAPMAN, considering such a motion a slur upon the directors, and one which the proprietary in general would not sanction, demanded a ballot.

Mr. WHEELER suggested the withdrawal of the motion, as he felt the directors had the confidence of the proprietary.

Mr. GREGORY (the solicitor) informed the meeting that, according to the terms of the charter, a by-law must be made, fixing the time and place of taking the ballot.

After considerable discussion, it was agreed that the directors should frame the requisite bye-law, and then call the proprietors together, for confirming the same, and for taking the ballot.

Upon the motion of Mr. GODFREY, seconded by Mr. RHODES, it was unanimously resolved to declare a dividend of 11s. 6d. per share, free of income-tax.

The retiring directors and auditor were then unanimously re-elected.

The meeting was then made special for the election of an auditor in the room of J. O. Hanson, Esq., who had become a director of the company. There were two candidates: Mr. Wilkin, a director of the British Gas Company; and Mr. Garraway, secretary to the Brighton and Hove Gas Company.

Upon a show of hands being taken, there appeared 19 for Garraway; and 18 for Mr. Wilkin.

Mr. GODFREY demanded a ballot on behalf of Mr. Wilkin, which it was agreed should take place at the same time as that upon the question of the appointment of a committee.

Upon the motion of Mr. RHODES, a vote of thanks was unanimously passed to the directors, and the proceedings closed.

CRYSTAL PALACE DISTRICT GAS COMPANY.

The Ordinary Half-Yearly Meeting of this Company was held at the Albion Tavern, Aldersgate Street, on Thursday, the 11th of September, inst.—ERASMUS WILSON, Esq., F.R.S., in the chair.

The SECRETARY (Mr. Ohren) read the advertisement convening the meeting; and the seal of the company was affixed to the register of shareholders.

The following report of the directors and statements of account were presented:—

The directors report the prosperous working of the company's operations during the half year.

The works and plant are in good order, and effective.

The balance-sheet for the half year, made up to the 30th of June, and appended to this report, shows the financial position of the company. The profits for the half year are £2834. 17s. 3d., which, together with £148. 13s. 2d., the unappropriated profit of the last half year, makes the available balance £2983. 10s. 5d. Out of this sum, the directors recommend the declaration of a dividend after the rate of 6 per cent. per annum on the preference capital; and a dividend after the rate of 8 per cent. per annum on the ordinary capital of the company, both free of income-tax; the balance of £467. 7s. 9d. to be carried forward to the profit of the succeeding half year.

Dr. *Profit and Loss, Half Year ending June 30, 1862.* *Cr.*

To Amount for coals carbonized			£3,804 15 11	By Gas rental	£8,665 10 8	
Lime and oxide			90 9 3	Meter ditto	160 3 5	
Trade charges			313 4 8			8 825 14 1
Rent, rates, and taxes			281 8 4	Coke made for sale		1,564 9 9
Directors and auditors fees			270 0 0	Breeze ditto		59 5 0
Salaries and collector's commission			438 17 11	Tar ditto		119 8 6
Wages			1,225 16 10	Sulphate of ammonia, net profit		152 17 5
Interest on loans			357 2 2			
Law charges			75 0 0			
Bad debts and allowances on collection			173 2 5			
Reserve-fund			698 0 0			
Retort account			150 0 0			
			£7,877 17 6			
Balance			2,834 17 3			
			£10,712 14 9			£10,712 14 9

Dr. *Balance-Sheet, June 30, 1862.* *Cr.*

By Proprietors for paid-up capital—				To Amount for plant, &c.	£71,469 9 2
5000 shares, at £10 per share	£50,000 0 0			Freehold land	2,511 18 7
Less amount unpaid	11 0 0			Preliminary expenses	3,384 13 1
		£49,989 0 0		Parliamentary ditto	796 9 5
5000 preference shares, at £10 per share	£50,000 0 0			Retort account	1,376 15 3
Less amount uncalled	26,001 0 0			Stock on hand	3,843 0 4
		23,999 0 0		Amount due from sundry persons	739 0 4
Loans		11,1.0 0 0		Private rental and arrears	4,702 12 1
Amount due to sundry persons		5,818 3 11		Public rental and fitting arrears	2,047 0 11
Reserve-fund		1,800 0 0		Balance at bankers	4,818 15 2
Profit unappropriated, Dec. 30, 1861		148 13 2			
Profit and loss		2,834 17 3			
		£95,689 14 4			£95,689 14 4

Appropriation of Balance.

Profit unappropriated, Dec. 31, 1861	£ 148 13 2	Dividend on preference share capital, at 6 per cent.	£ 516 11 5
Balance of profit and loss, to June 30	2,834 17 3	Ditto on original share capital, at 8 per cent.	1,999 11 3
			£2,516 2 8
		Balance to be carried to next account	467 7 9
	£2,983 10 5		£2,983 10 5

The CHAIRMAN, in moving the adoption of the report, said the shareholders would probably have noticed the extreme brevity of that document. The truth was, the directors had no novelties to record; they had nothing more to say than that they were going on very satisfactorily—labouring hard, and, as they hoped, with a beneficial result. The proceedings of the company had been, in all respects, prosperous during the half year. The second paragraph in the report was the briefest of all; at the same time, there was a solidity about it which gave its brevity an importance much more considerable than a longer paragraph might have had; for it told them that "the works and plant are in good order, and effective." The report then proceeded to the next important—the money matter; and the shareholders would perceive that the profits for the half year had been such as to enable the directors to recommend a dividend upon the ordinary shares of the company equal to 8 per cent. per annum. They would remember that at the last half year the dividend which was recommended and carried by the meeting was a dividend equal to 7 per cent. per annum, with the addition of 1 per cent., in the form of a bonus. The directors felt at that time that it would be premature to regard the dividend in the light of an 8 per cent. dividend. Another half year, however, had placed them in the position of boldly recommending that the entire 8 per cent. should be regarded as the dividend, on the rate per annum. It was no longer a 7 per cent. dividend, with a bonus, but a positive *bonâ fide* dividend of 8 per cent.; and the directors had every hope and expectation in proposing it, that they would be able to keep it up, and probably increase it. It must be in the knowledge of all those shareholders who had been connected with the company from the earliest periods of its history, that it was not without considerable labour and attention to its affairs that the company had been brought into the position which it occupied at the present moment. He supposed they might regard that position as a successful one; and yet, if they looked at that success in its proper light, it was nothing more than they ought to have expected; indeed, he might say it was something less than they ought to expect—not, perhaps, in the time, but in time to come. The company had been now in existence eight years; and the dividend was now 8 per cent., upon money laid out in a concern associated with some degree of risk; and, perhaps, the smallest return they had a right to expect was 8 per cent. The circumstances under which this company had been placed were peculiarly favourable for the success of their operations. In the district supplied by them, buildings of a superior quality were being erected on all sides. It was an extensive district, the houses in which were springing up as if by magic; and, indeed, its progress was so rapid that the difficulty of the company was to keep up with the march of colonization that was taking place. But, even with all these advantages, he had to call the attention of the shareholders to the fact that the directors had had pretty hard work to effect their object; and, though they had accomplished so much, it was only what honest, well-meaning, and persevering men had a right to expect in the time in which they had been engaged. It was no small undertaking to start a company of this kind, and to conduct it quietly and slowly on to success. It was a kind of thing which a man only engaged in once in his lifetime: it was too arduous, too anxious, too serious a struggle to be repeated frequently. But, as he said before, although they had attained in this instance a considerable degree of success, and though that success was pretty solid, and such as Britons liked to see, it was, nevertheless, nothing upon which the directors had specially to pride themselves. He had no doubt, moreover, as to the future prosperity of the company; but they must not suppose they were going to carry the world by storm. It was not in the nature of human undertakings to rise with such splendour as to be entitled to be regarded as perfectly successful, without the devotion of a serious amount of labour to them. In every matter connected with their works and the conduct of their operations, the directors of this company had always had in view he

strictest economy. Probably, however, there was one shareholder, Mr. Livesey, who would say to them, "Well, with all your economy, I think you ought to get more gas out of a ton of coals than you do." And then, again, although the directors had exercised the greatest amount of vigilance to see that their mains were in a proper condition, another shareholder, Mr. Box, would probably tell them that their leakage was more considerable than he approved of. No doubt there were holes in their jackets—the directors were quite ready to admit the fact—and all he could say in reply was, that he hoped they had all been so trained to the use of the needle and thread that they would be able, when these defects were ascertained, to set to work and mend them, and to make these parts of their garments, if not the most handsome, at least the most secure. There were other matters upon which the directors were exercising a fair amount of care in the interests of the shareholders. They had adopted a scheme by which, regulated by the profits of the company, every one engaged on the establishment was so benefited as to feel that, if he could improve the dividends of the shareholders, he would himself be a gainer. By this means, the workmen came to look upon themselves not exactly in the light of servants, but of men having a share, although a small one, in the affairs of the company—that the concern was theirs, in point of fact; that they belonged to it, and that their interests were associated with its success. There was nothing in this that was new and peculiar to this company. The plan had been tried in other companies, and was found to work well. Its introduction here was due to the thoughtful consideration of Mr. Stephenson for the welfare of all concerned; and, certainly, so far as it had been carried out hitherto, it was in the highest degree satisfactory. The result of the operations of the company during the past half year not only enabled the directors to recommend the dividend he had already referred to, but, as would be seen by the closing paragraph of the report, left a balance of £467 to be carried forward to the profit of the present half year. That provision was made with the same caution as the other proceedings to which he had alluded. It might be said the sum was rather large, and that it would be well to divide it at once. To that he answered, it would be better to divide it at Christmas. Probably that would be a dear time, and the shareholders would all be glad to find their dividends were increased. After careful consideration, the directors had come to the conclusion that the course they had recommended would be the best, and if, as the result, it should bring the next half year's dividend up to 10 per cent., that was a matter which could not be helped. As he had said before, the 10 per cent., should their dividends reach that point, would not be the result of any sudden and unexpected discovery, but of the patient toil and care bestowed on the operations of the company. These were all the remarks he felt it necessary to make in reference to their position and prospects; and he would conclude by moving—"That the report and accounts now presented be approved, adopted, and entered on the minutes."

Mr. Gaeraway seconded the motion. He said, after the clear and lucid statement of the chairman, he feared there was little left for him to say in reference to the affairs of the company. Speaking, however, from the experience he had acquired as one of their auditors, he had no hesitation in stating that he knew of scarcely any company which was in so sound a condition as this, considering the few years it had been established. There were few companies which could, in the first eight years of their existence, point to such results as had here been realized. Many companies, after eight, ten, and even twelve years of operations, could only pay 5 per cent., and some not so much. In this company, they were able to pay honestly an 8 per cent. dividend, and he looked forward, believing from the remarks of the chairman he was fully justified in doing so, to their being able, within the first ten years of their establishment, to pay 10 per cent., particularly if they continued to be favoured with such careful management as they had at present. There had been an immense deal of labour to be performed in this company, and their works were not in that unfinished or half-finished state, in which the works of many companies were seen when they first entered upon the world. The manufacturing power of the works at Sydenham, he apprehended, would carry the company on for many years of profitable operations, without much more outlay upon them. The directors had aimed to make them model works, and, if the consumption of gas increased during the next two or three years, as it had done in the last, they would be thoroughly adequate to the demand made upon them, and the shareholders would realize all they desired. He spoke this sincerely as his own conviction; and having this opinion of the general management of the company, and the position of their affairs, he had much pleasure in seconding the motion for the adoption of the report.

Mr. Box said he did not find any item of "wear and tear" in the accounts, and he observed that all their capital was called up. Although the works were in a good substantial state at the present moment, and might continue so for many years, the time would come when they would be worn out; and, therefore, there should be some provision for reinstating them. He wished, also, to be informed what was the object of the reserve-fund—whether it was to meet contingencies, or for outlays when the capital was completely expended, for extension of plant, or for casualties as they arose?

Mr. Stephenson (deputy-chairman) said the honourable proprietor was right in stating that all the capital on ordinary shares was called up except £11. As regarded the reserve-fund, it was for wear and tear, for equalizing dividends, and various other purposes, as directed by their Act of Parliament; but the directors did not look upon it as applicable to future extensions of works. These would have to be made out of capital; and, to meet their cost, the preference shares would have to be called up.

Mr. Box inquired what was the present per centage of unaccounted-for gas, taken upon his "unvariable calculation" of 9500 cubic feet of gas per ton?

Mr. Stephenson said he did not take so high a standard as that. The unaccounted-for gas was 15 per cent. during the last half year.

Mr. Box said he had the satisfaction to tell the meeting that the unaccounted-for gas was not so great a per centage as the deputy-chairman gave. Taking it according to his uniform practice, it was only a little above 13 per cent. He called that an exceedingly satisfactory state of things, and he knew of only one or two other companies where the per centage was less. The past half year's working was the best of any since he had been a proprietor, the expenditure upon the revenue having been considerably reduced. In former times, it had been as high as 81 per cent., but never before so low as 73½. The coals consumed had also cost less, by 1½d. per ton. There had been an additional consumption of 621 tons, at a proportionate advantage to the company. The increase on the earnings for gas was 14 per cent., making, upon the quantity of coals carbonized, an additional rent of £591. 15s.; and the total reduction on expenditure was £321. He had, therefore, great pleasure in supporting the motion for the adoption of the report. He asked for an explanation respecting the item, "Bad debts," the amount of which appeared to be considerably higher than before.

Mr. Stephenson said it was so, as unfortunately they had sustained a loss of over £100 on the sulphate account. In answer to further questions, he stated that the directors had security from their manager and collector, through whom alone the monies of the company passed before reaching the bankers.

The resolution was carried unanimously.

Mr. J. Gray moved—"That a dividend after the rate of 6 per cent. per annum on the paid-up preference capital, and a dividend after the rate of 8 per cent. per annum on the ordinary capital of the company, be now declared for the past half year, and made payable forthwith, free of income-tax."

Mr. T. Cant seconded the resolution, which was at once adopted.

Mr. Morrison moved a vote of thanks to the directors, and added the expression of a wish that the rate of remuneration allowed for their services should be increased.

Mr. Box seconded the motion.

The Chairman said the suggestion for increasing the directors fees came entirely from Mr. Morrison, and the board were not at all aware that the honourable proprietor intended to propose it. He (the chairman) felt that he was expressing the wishes of his colleagues, when he said that the directors could not agree to such a motion at the present time. When the company was in a position to pay 10 per cent., they might possibly be pleased with such an acknowledgment of their services; but as yet they would rather go on as they were.

The vote of thanks was then put, and carried unanimously.

Mr. Hetley acknowledged the compliment on behalf of the board.

A vote of thanks to the auditors followed, and was acknowledged by Mr. Gray.

Mr. Stephenson said, the directors would have been able to do very little in the working of the company, if they had not been supported by good officers. The board had endeavoured to be liberal to their staff; and they intended, in the interests of the proprietors, to continue the same policy. They were quite sure that it was the true policy upon which a concern like this should be worked. The directors believed that they had good officers, and that they were well served. Unfortunately, the product account of the company did not show so good a result as they could wish; but that was not from any defect in the working, but from the low prices which prevailed in their district. As a general rule, they could not command high prices; but the shareholders would see that the working in the retort-house was good, and they would recollect that it was there the profit and loss were made, if anywhere. When he told them that their fuel account was not more than 23 per cent., they would agree with him that the working was highly satisfactory. They did occasionally hear of some companies—not London companies—in which the fuel account rose to 30 and 40 per cent.; and it was often a boast that 20 per cent. showed a very good state of things Considering, therefore, that in this company they used a large quantity of small coal, it was, as he said, satisfactory to find their fuel account only 23 per cent. He concluded by moving a vote of thanks to the officers of the company, which was seconded by Mr. Wilson, and carried unanimously.

Mr. Ohren (the secretary) and Mr. R. M. Christie (the consulting engineer), acknowledged the vote.

The proceedings closed with thanks to the chair.

EUROPEAN GAS COMPANY, LIMITED.

An Extraordinary General Meeting of the Shareholders of this Company was held, on Wednesday, Sept. 17, at the offices of the Company, Frederick's Place, Old Jewry—Sheffield Neave, Esq., in the chair.

The Secretary (Mr. Backler) read the notice convening the meeting, and the minutes of the last meeting, which were confirmed.

The Chairman observed that this meeting, being merely a formal one, to confirm a resolution for the increase of capital, he would not detain the shareholders by making any remarks, but would at once proceed to move the confirmation of the following resolution:—"That, in consequence of the increase of the business of the European Gas Company, Limited, the capital of the company shall be increased by the issue of 12,000 new shares of £10 each, or of any smaller number, and in any lots or portions, from time to time, as the directors shall see fit; such shares to be issued at par, or at such price or prices, and by such apportionments, and subject to such terms and regulations as the board of directors may determine; and that the first call on such new shares shall be £2. 10s. per share on allotment; and that such new shares shall, in all other respects, be subject to the same laws and liabilities, and be entitled to the same rights and privileges, as the present existing shares: that clauses numbered 3, 29, 30, and 31, of the regulations of the company shall be considered as specially altered, amended, and controlled by this resolution, and shall be read and acted upon as if the increased capital herein provided for had formed part of their original provision; and that clause 82, as to the division of dividend and bonus of the company, and all other clauses of the said regulations, shall be construed and made applicable to the increased capital hereinbefore provided for: and that, with a view to make the said increased capital at once available, and as a monetary provision until the said shares shall be fully paid up, the board of directors shall have further power, from time to time, to borrow and re-borrow any sum or sums of money, in addition to the £75,000 already borrowed, but not exceeding the amount of calls unpaid, together with any balance yet uncalled, on any number of shares that the directors may be empowered to issue; and that such loans shall be at such rate of interest, and subject to such terms as the board of directors shall see fit, and shall be secured on the property of the company by any of the instruments and in the manner prescribed in clauses 33 and 34 of the regulations of the company, as the directors shall see fit, and that clause number 32 of the regulations of the company, and also the special resolution passed on the 7th of August, 1861, and confirmed on the 18th of September, 1861, to enable the borrowing of a further amount of £25,000, shall stand enlarged, amended, and controlled, by this resolution, so as to enable the further borrowing of moneys, as aforesaid; and that all other the clauses of the said regulations of the company shall be construed in connexion with these powers and this additional resolution, and so as to carry out the same, and make them effective."

Mr. Thomas Smith seconded the motion, which passed *nem. dis.*

Mr. Gaimes inquired, whether it was the intention of the directors to issue the whole of the new shares at once?

The Chairman replied that they would at once be allotted to the shareholders, in the proportion of one new share for two old shares now held;

and that a call of £2. 10s. per share would be made payable on the 10th of October.

Mr. GAIMES inquired, whether the chairman could give him any idea when a further call would be made?

The CHAIRMAN said the sooner the better: probably, within twelve months; but that must depend on the requirements of the year; and it would be impossible now to give any definite assurance without running the risk of misleading the shareholders.

Mr. DEAR said it was important the shareholders should know, in order to regulate their financial arrangements accordingly. He was of opinion the better course would have been to borrow money, rather than raise new capital by shares.

The CHAIRMAN said that the shareholders themselves had decided otherwise at the two previous meetings; but that the directors intended to exercise their borrowing powers for the current wants of the undertaking.

Mr. BROWN (a director) observed that calls would be made on the new shares when the extension of the works required the outlay of additional capital.

Mr. W. T. FAWCETT said it was understood at the last meeting that no large sums would be borrowed until £5 per share had been called on the new shares. It would not be prudent to increase the loan-capital until the share-capital had been so far extended.

The CHAIRMAN said he confirmed that understanding. Calls would be made for purposes of extension, and loans resorted to for all temporary purposes.

Mr. T. N. STOKES moved a vote of thanks to the chairman and directors; and the motion, having been seconded, passed unanimously, and was acknowledged by the chairman.

METROPOLIS GAS SUPPLY.

CITY COURT OF SEWERS, GUILDHALL, TUESDAY, SEPT. 16.

At the Meeting of the Commission, this day—Mr. DE JERSEY in the chair,

Mr. DAW (the chief clerk) read a letter from Mr. A. Page, the landlord of certain premises in the neighbourhood of Earl Street, Blackfriars, complaining of the gas-works recently erected by Messrs. Hadley, in Huish Court, which he considered were dangerous to the safety of his property, and to the neighbourhood generally. The letter stated that the heat from the fires penetrated through to Mr. Page's premises, rendering some of his rooms quite untenantable; and, in the opinion of the writer, there was great danger of the house being burned down. The premises specially referred to as endangered were No. 4, Printer Street; and the immediate attention of the court was asked to the subject.

The CHAIRMAN reminded the commission that, some time ago, Messrs. Hadley applied for permission to carry a pipe across the road, from the place where they were about to manufacture gas upon some new principle, for the purpose of lighting their flour-mills in Earl Street. That permission was granted; and the writer of the letter just read complained of danger to his premises from the operations now being carried on.

Deputy WHITESIDE said, he thought it was very strange that this court should give permission to erect gas-works in such a position.

The CHAIRMAN replied, that the commission never gave Messrs. Hadley leave to erect gas-works, but only to carry a pipe under the road.

Deputy WHITESIDE: But the result was, that they erected gas-works?

The CHAIRMAN: Quite so.

Deputy WHITESIDE: I think this is a matter that we should take up by our own proper officers.

The CHAIRMAN: We have no power to refuse or to consent to the erection of gas-works. The question of laying down the pipe from one place to another was brought before the court, and we consented to it.

Deputy WHITESIDE: I shall move—"That it be referred to the engineer, with instructions to make such an inspection as may be necessary, to enable him to report thereon to the court."

Dr. ABRAHAM: I should like to know, what was the nature of the first application. There was nothing said about the establishment of a gas manufactory, I think.

The CHAIRMAN: It was stated that they were about to manufacture gas upon a new principle, for the supply of their own mills, and the application to us was for permission to carry a pipe under the road, to convey the gas from the place of manufacture to their premises on the other side of the street.

The ASSISTANT-CLERK read the minutes of the court of the 17th of June upon the subject, which recited the nature of the application, and recorded that the same was referred to the General Purposes Committee, to examine and report.

The CHAIRMAN, in answer to Mr. Young, said the premises were viewed by the committee, and a report made upon the subject.

The CHIEF CLERK said it was then understood that the gas was to be manufactured by some new process, which was perfectly innocuous, and in which he believed water was to be used.

Deputy WHITESIDE: It may be so, and yet be dangerous.

Mr. C. YOUNG: I understand, from what I have heard, that they manufacture gas, not from water, but from the new article imported—petroleum. This is a very different thing. I think our inspectors should have reported that certain works were in course of erection, and what they were for.

The CHAIRMAN: The Committee on General Purposes viewed the premises.

The ASSISTANT-CLERK: The committee made the following report on the 22nd of July:—"With regard to the application of Messrs. J. and J. Hadley, to lay down pipeage under the pavement of Huish Court and Bristow Street, to carry a new description of gas, manufactured at the rear of their premises, No. 4, Earl Street, to the City Flour-Mills, we are of opinion that, inasmuch as the experiment about to be made by Messrs. Hadley may lead to a more economical system in the lighting of the public lamps, permission should be given to lay down the said pipeage, under the direction of your engineer, and to continue during the pleasure of the commission."

Mr. C. YOUNG: There is not one word said as to what the gas is to be made from. I think, therefore, under the circumstances, we should look into the matter; and I shall second the motion.

Dr. ABRAHAM thought the medical officer should be associated in the inquiry.

Deputy HARRISON said, he supposed the mover and seconder could show the court in what way they had any authority to interfere in the matter; but he could not himself see how it was. If it were a question affecting the health of the citizens, they might have something to do with it; but he was at a loss to understand how they could interfere with the manufacture of gas. Should that manufacture prove to be a nuisance, the parties aggrieved had their remedy elsewhere, but not before this court. They had sanctioned it as far as they could, by giving permission to lay down a pipe; but they could not go into the merits of the invention, which was a patent one, and they had no authority to interfere with it. They had better, therefore, leave the inventor and the parties to settle their differences out of court. If the carrying out of the process made the next house too hot, the owner had his remedy before the proper tribunal, and this court must leave him to act in the matter as he might be advised by his solicitor.

Deputy JONES said he thought the advice just given was correct. If his honourable friend had been brought up to the law, he could not have given a better opinion.

Deputy LOTT said, the honourable commissioner (Deputy Harrison), although not a lawyer, had a legal mind.

Dr. ABRAHAM said he did not think the exact state of the case had been brought before the court. They had certainly made themselves responsible by permitting Messrs. Hadley to use the public highway to carry out a private experiment. To that extent, the commission had compromised themselves; and, as they had afforded the parties facility for using the gas when made, it behoved them to see that in doing so they had not aided and abetted the establishment of a nuisance. It was not enough for them to say that they had no power to interfere with gas-works when once they were established. The fact was, that gas-works were never erected without the express authority of an Act of Parliament; and how could they tell how far this was to be carried out. The question was, could gas be made anywhere without being a nuisance to the neighbourhood? If it could, it was a secret to him, and he thought they ought to know the truth about it. He said it very much concerned this commission to know if it could be, and he hoped they would not be disposed to dismiss this subject in the manner which Deputy Harrison advised. Let the engineer and medical officer inquire into all the facts, and report whether this was a manufacture injurious to health, and such an one as the court ought to permit.

Mr. REED thought the court had enough to do, without interfering in this matter. His worthy friend had raised the sanitary question, but that was not really before them, and they ought not, therefore, to discuss it.

Deputy OBBARD said, Dr. Abraham had gone further, for he had stated that the court had already interfered, and sanctioned the manufacture; but such was not the case. Some one came to the court, and asked for permission to lay down a pipe from one side of the street to the other. The court consented to the request, but they had nothing to do with the object for which that pipe was required.

Mr. C. YOUNG said, when the Great Central Gas Company was formed, they applied to this court for certain rights and privileges. The court then entertained the question, and held a very strong hand over the company, and, therefore, he thought they had power to interfere in this matter. If the whole truth had been told when the application of Messrs. Hadley was first made, he believed the commission would have looked into it more closely than they did. He was not finding fault with this new manufacture, but he felt they were bound to take some step when a party came before them, and stated that the effect of it was injurious to health.

The CHAIRMAN said, that was not the complaint. The writer said he considered the manufacture was dangerous to the safety of his property and the neighbourhood, because of the heat from the furnaces.

Mr. C. YOUNG said, he thought if the proposed inquiry were made by the medical officer and the engineer, such a report would be made that the court could deal with the whole question. It was evident that destruction of life might arise, and, as the court had before entertained the question with regard to the supply of gas, they ought to have some more information on this point. As they had two officers who could afford them some assistance, they ought to be called upon to give it; and the court could then deal with the matter in any way they pleased.

Deputy WHITESIDE, in reply, said he had often heard his friend, Deputy Harrison, with much pleasure, but he must remind him that, on a previous occasion, this court had attempted to interfere with the gas supply of the City. If the worthy deputy would refer to the accounts of the commission, he would find, from the lawyer's bills and other expenses, that they had, at one time, interfered, at a very large cost, in an endeavour to break up a gas manufactory, which had been established, for many years, in the City.

Deputy HARRISON: That was by opposing a bill in Parliament.

Deputy WHITESIDE said, notwithstanding that, his friend told them, they had nothing to do with the manufacture of gas in the City. He (Deputy Whiteside) remembered very well that, on that occasion, his friend took up the cudgels in favour of the Great Central Company, and did all he could to get rid of the other company, and force them away from the City, so that the Great Central might have a better chance of competing with them. He then spent a great deal of talent and ingenuity in endeavouring to show the commission that they ought to get rid of the other company. Deputy Lott said that, "Although his friend was not a lawyer, he had a legal mind;" and it certainly did appear that, on that occasion, he was employed in some way or other—his legal mind was employed——

Deputy HARRISON: I really must interfere. I was not employed by any human being—I never have been; and I hope my friend will withdraw that expression.

Deputy WHITESIDE said he was afraid he was not well understood. He intended to say that the worthy deputy employed his legal mind; but his friend did not hear that. He (Deputy Whiteside) would be the last in the world to charge his friend with being employed by any persons to promote their private interests in the commission; and all he wished to say was, that his friend's legal mind was directed to accomplish the object he then had in view. But, on the present occasion, he had started on the other side, and asserted that there was no harm in gas being manufactured in the City, and that this court had nothing to do with the question.

Deputy HARRISON: That is a little too bad.

Deputy WHITESIDE: I so understood you.

Deputy HARRISON: Indeed, I did not say so. It is no part of this question, and that is all I say.

Deputy WHITESIDE: This letter states that gas-works have been established there, and, that they are dangerous to private property and to the public generally.

Deputy HARRISON: No, it does not.

The CHAIRMAN: It says that certain gas-works have been recently erected by Messrs. Hadley, in Huish Court, which the writer considers are dangerous to the safety of his property and the neighbourhood, the heat from their fires coming through to his premises rendering some of the rooms quite untenantable, and that in his opinion it is liable to set fire to the house.

Deputy WHITESIDE would ask what was that but being dangerous to the neighbourhood and to the public generally? Was it not dangerous to life?

He asserted that it was, and that this letter ought to be sufficient to arrest the attention of the commission to the subject. They were a public body, not simply for the protection of the sanitary condition of the City, but for the protection of the lives and limbs of her Majesty's lieges in the City. If there were a dangerous hole in the pavement, were they not responsible for it? If there were a falling house, were they not the proper parties to see after it? He maintained that they were the public body to whom the inhabitants of the City had a right to complain of a nuisance in the first instance. If, upon inquiry, it was found that they had no power to remedy the evil complained of, they would tell the parties so, and let the public understand the fact. He believed they had the power, and, seeing the confidence which the citizens of London reposed in them, they were bound at least to inquire into a matter which was said to be dangerous to private property and to the neighbourhood. In honour and equity, if not in law, they were called upon to get all the information they could upon the subject, and to make a report.

The motion for referring the letter to Dr. Letheby and Mr. Haywood to examine into the cause of complaint and to report, was then put and negatived, there being for the motion 10, against it 14.

Mr. GREEN asked, what answer would be returned to Mr. Page? Would he be informed that the court could not take notice of the complaint in that form, and that he had his remedy in another way?

The CHAIRMAN said, unless there was a special motion on the subject, the clerk would simply acknowledge the letter.

On the motion of Deputy HARRISON, it was then resolved that Mr Page be informed the court could not entertain the application, without expressing any opinion as to the legal mode of proceeding.

Mr. C. YOUNG, at a subsequent period of the day, asked Dr. Letheby whether he was aware that gas was being manufactured in Earl Street by Messrs. Hadley?

Dr. LETHEBY said, he was not aware of it. He had merely heard a report that there was a new mode of manufacturing gas, but the process had not come under his notice.

Inspector PAINTER reported (*inter alia*) that Mr. Oxley, the beadle of the ward, informed him that a fire occurred on the previous night at the back part of the premises in Printer Street, through the heating of the furnaces for making gas out of water for the supply of the City flour-mills.

Mr. C. YOUNG: That is just what I said would be the result.

Deputy HARRISON: Well, but he knows nothing at all about it.

Mr. C. YOUNG: I am not discussing the correctness of the report.

Deputy HARRISON: What can you possibly do in this case?

The CHAIRMAN: If an accident happens, they will be liable for it.

GAS TESTING-HOUSE.

Mr. HAYWOOD said, the house which, as he reported to the court before the recess, he had taken at Aldgate for the purpose of testing the gas supplied to the City had been approved of by all the companies; but the owner now wished the commissioners to take it for a term of seven years. This was quite a new feature in the negotiation, and he had not felt himself at liberty to engage the premises for so long a period without the sanction of the court. He believed, however, that the place could be had for three years.

Dr. LETHEBY said, the apparatus to be fixed there would be very expensive, and it would be better to have the premises for a term.

Dr. ABRAHAM was for taking them for the full term of seven years. If they only engaged them as yearly tenants, the owner, when he found they had fixed up costly apparatus, would perhaps double the rent at the end of twelve months.

Mr. HAYWOOD recommended that the premises should be taken for three years; and, in answer to questions by Mr. Young, said the rent was £70 per annum, and the portion of the house required was three rooms on the second floor.

On the motion of Dr. ABRAHAM, seconded by Deputy HARRISON, the recommendation of the engineer was agreed to.

WANDSWORTH DISTRICT BOARD.—WEDNESDAY, SEPT. 9.

A letter was read from the Chairman of the Wandsworth Gas Company, in reply to the communication of the board, as to the supply of gas by that company. It stated that there had not been a complaint made to the company as to the lighting for months past, and, further, that, when complaints were made, they were properly and promptly attended to. Mr. Howell also said that, speaking from his own constant observation, he believed he could say that the statement made by the gas examiner to the board, in his report, dated the 13th ult., was a gross perversion of the truth.

A report was also read from the gas examiner (Mr. F. W. Beaumont). It stated that the Phœnix Company's gas at Kennington Lane, was, on the 2nd inst., 13·4 candles. It continued to be more or less ammoniacal. On the 29th ult., he found the supply of the Mitcham Company, at Garratt Lane, even more deficient than the supply to Streatham. It was also ammoniacal. On the 1st inst., he visited Battersea, and, although he then found that the lighting by the London Company was generally good, yet Surrey Lane, Bridge Road, Marsh Lane, and other places, were far from being properly lighted. This, however, he was inclined to think might be attributed to the lamplighters. On the 5th inst., he was at Wandsworth, close to the gas-works, and found that Putney and Battersea were each supplied by an independent main. The gas was ammoniacal. The previous night he had also been at Wandsworth, and found the parish very irregularly lighted, some of the streets having a remarkably good light, whilst others were in the old-fashioned style. He also found that the men in the employ of the company commenced extinguishing the lights far too early, he having seen them begin, within the last few days, as early as half-past three or four in the morning. The report concluded by a reference to the letter from Mr. Howell. Mr. Beaumont wished the board to understand that he adhered to what he stated about the supply of the Wandsworth Company, and, in order to put the matter beyond a doubt, he had had the meters retested and sealed.

The CLERK, in reply to a question, said that the board had no remedy, even if the Wandsworth Gas Company commenced extinguishing earlier, as there was no contract between the company and the board.

Mr. PARISS thought that the company would have been ashamed to receive the money for supplying the lamps, if they did not give a proper supply.

The board directed that a letter should be sent to the company, drawing attention to the very early hour at which the lamps were extinguished.

SUPPOSED ESCAPE OF GAS AT STREATHAM.

The SURVEYOR for the parish (Mr. Barber) reported the receipt of a letter from Mr. J. Vickers, stating that the trees in his grounds were being destroyed in consequence of the escape of gas from the mains of the South Metropolitan Gas Company.

Ordered, that the company be communicated with on the subject.

THE MANCHESTER GAS SUPPLY.

REDUCTION IN THE PRICE OF GAS.

A Special Meeting of the Manchester City Council was held on Wednesday the 3rd instant—THOMAS GOADSBY, Esq., the Mayor, presiding, at which a report from the Gas Committee was received, under protest from Councillor Grundy and some other members, both on account of its contents, and the brief time allowed for its consideration. The following is the report:—

Revenue.

In submitting the accounts of this department for the past year, your committee regret to have to report that, although the number of consumers has continued steadily to increase, there has, in consequence of the state of trade which has been induced by the American war, been a falling off in the quantity of gas consumed equal to 2 per cent., as compared with the previous year.

The gas-rental, including meter-rents (amounting to £244. 2s. 6d.), has amounted to £143,310. 9s. 6d., as against £152,323. 19s. 3d. the previous year, being a decrease of £9013. 9s. 9d. Of this latter sum, £6500, or thereabouts, is due to the last reduction in the price charged to private consumers (the full effect of which was during the past year for the first time experienced); and £1200, or thereabouts, is attributable to the first half year of the reduction in the charge for gas supplied to the street-lamps within the city, which came into operation on the 25th day of December last. A similar decrease in the rental, in respect of the second half year of the reduction in the price for street-lamps, will be experienced during the current year.

For the information of the council, a statement is submitted, showing the rental derived from the townships within and beyond the city respectively during the last two years, by reference to which, it will be seen that the falling off in consumption has taken place in the townships within the city. (See Appendix A.)

On reference to the profit and loss account, it will be seen that the gross profit amounts to the sum of £42,667. 7s. 1d., as against £51,825. 0s. 1d. in the previous year, being a reduction of £9158. 7s., which amount nearly corresponds with the diminution of the rental.

After payment of interest, amounting to £15,482. 3s. 2d., and transferring to capital account the sum of £19,330. 14s. 4d. towards repayment of the mortgage debt—the balance to be paid over for improvement purposes amounts to £7,854. 9s. 7d.

Your committee submit for the information of the council the following report, which has been received from Mr. David Chadwick, on his completion of the audit of the accounts for the past year:—

[COPY.]

"*To the Gas Committee of the Corporation of Manchester.*

"Gentlemen,—I beg to report that I have completed the audit of the gas accounts for the year ended June 24, 1862, and certified their correctness.

"My audit has included the checking of the whole of the entries in the cash-book, bank pass-books, journal, and personal and impersonal ledgers, and the capital account.

"I have also checked the list of mortgages at present existing, the old mortgages paid off and cancelled, and new loans received during the year; and have certified the profit and loss accounts, statement of receipts, and expenditure on capital and revenue accounts, statement of assets and liabilities, and the general balance-sheet.—I am, gentlemen, your most obedient servant, DAVID CHADWICK.

"75, *King Street, Manchester, Aug.* 28, 1862."

Your committee have also to report that the average illuminating power of the gas supplied during the past year has been equal to 21·82 candles, as reported by Mr. John Leigh, consulting chemist to your committee, from daily photometrical observations made by him at his residence, which is situated near the centre of the city; and that, during the same period, the gas has been remarkably free from sulphuretted hydrogen, and has contained a very minute quantity only of ammonia.

Your committee having given considerable attention to the subject of the means to be adopted for increasing the number of domestic consumers, deemed it desirable, in the month of February last, to engage a canvasser, whose duty it is to place himself in communication with the owners and occupiers of dwelling-houses which have not previously been supplied with gas, and, if possible, to induce the occupiers to become consumers.

Your committee are not prepared to report that any very satisfactory results have as yet been derived therefrom; but, they think, it would be premature to express an opinion until the plan has been tried an entire year.

Your committee also submit for the information of the council a comparative statement of the number of each size of meters in use on the 24th of June, 1861, and 1862. The total number in use at the latter date (including 1417 meters lent on hire) was 35,520, being an increase upon the previous year of 2346. (See Appendix B.)

Street-Mains.

Your committee have had a schedule prepared of the main-pipes laid up to the 24th of June, 1861, a summary of which they submit; as also a statement of those laid and taken up during the past year. (See Appendix C.) Arrangements have been made by which the additions and alterations in the main-pipes will hereafter be regularly entered in the schedule referred to, and which, together with a corresponding set of plans, will for the future form a permanent record of the main-pipes laid and taken up. The outlay during the past year on street-mains account has amounted to the sum of £5246. 10s. 2d.

Extension of Works.

The expenditure on capital account at the Gaythorn station, during the past year, has amounted to £9603. 8s. 11d.; and, at the Rochdale Road station, to £6654. 4s. 4d.

Of the former amount, the sum of £8876. 16s. 6d. has been expended in connexion with the diversion and covering over of the river Medlock (now completed), and which is in preparation for the intended new retort-house and cannel-stores at Gaythorn station.

This outlay for the present is, and until the completion of the proposed works will be, unproductive.

The additional outlay at the Rochdale Road station includes the sum of £3438. 15s. 3d., expended in the completion of No. 5 gasholder and tank, and in the purchase of the additional land required for the same.

Your committee have the satisfaction of stating that the whole of the gasholders, previously reported as in progress, are now completed.

Street-Main Store.

The formation of the main-pipe store for the streets department, the purchase of the land for which was reported to the council on 2nd day of October last, has now been accomplished, with the exception of the erection of the necessary workshops, which your committee expect to complete during the present year.

The outlay on this account has amounted during the past year to £2769. 5s. 7d.

Your committee have the satisfaction to report that their anticipations with regard to the increased economy and efficiency with which, as the result of the establishment of this yard, they would be enabled to conduct the business of the street-mains department, have been fully realized.

Every Street Station.

This property being no longer required for the purposes of the department, the whole of the apparatus formerly connected therewith has been removed, and your committee propose to dispose of the land when a favourable opportunity presents itself.

Reduction in the Price of Gas.

Your committee are aware that the balance for the past year, available for improvement purposes, is small, and below what the Improvement Committee ought to receive; but, considering the present state of the times, and being desirous of relieving, as far as possible, the pressure upon the small consumers; and having entered upon more advantageous contracts for the disposal of the tar and ammonia water, by which, at the present rate of manufacture, it is estimated that an additional sum of £6000 will be received for those products during the year; and, taking into account the fact that the profit for the past year has been reduced by the expenses which were necessarily incurred in consequence of the turn-out of workmen in September and October last, your committee are induced to anticipate the recommendation with regard to a reduction in the price, which they might otherwise have postponed until next year.

Your committee, therefore, recommend to the council that the price of gas to consumers within the city shall, from and after the 25th day of December next, be charged according to the following reduced scale, viz.:—

When the quarterly consumption is under 500,000 cubic feet	. .	3s. 9d. per 1000.
,, amounts to 500,000 and ,, 1,000,000	,, . .	3 8 ,,
,, ,, 1,000,000 and ,, 1,500,000	,, . .	3 7 ,,
,, ,, 1,500,000 and upwards	. . . . .	3 6 ,,

By the reduction now recommended, it is estimated that the rental, and consequently the profit, for the year ending June 24, 1863, will be reduced by the sum of £3600, in addition to the £1200 reduction on the street-lamps already reported, and the profit during the following year, 1864, will be reduced by the further sum of £3600, making together the sum of £7200; but your committee anticipate that the profit from the increased consumption in that year will more than equal the amount of the reduction now recommended.

On behalf of the Gas Committee,
MATTHEW CURTIS, Chairman.

Gas Offices, York Chambers, King Street, Aug. 29, 1862.

Councillor DYSON said that two or three hours were not long enough for digesting a report of such importance as the one laid before them. He noticed the apparent anomaly, that the report showed the mileage to have decreased. In 1849, the mileage was 304, and now it was given as 271. Mr. Dyson complained that encouragement was not given to those that wanted meters, and he contrasted the hindrances put in the way of gas consumption in Manchester with the facilities afforded in Rochdale and other places.

Another Councillor said he had only received his copy of the report a minute ago.

Alderman CURTIS explained, that a new survey had been made. Every exertion had been made to issue the report early, and it ought to have been delivered on Monday afternoon.

The TOWN-CLERK said the reports were not received from the Gas Committee until 4 o'clock on Monday, and three or four written alterations had then to be made in them.

Alderman CURTIS said the reports were sent to the town-hall at 3 o'clock, and, if the clerks there had expressed any difficulty about making the slight alterations, the clerks at the gas office would have done it. He was much disappointed that the reports did not leave the town-hall until Tuesday, and the delay was not his fault.

Councillor ASHMORE said, that if Mr. Dyson's plan were adopted, they would need half a dozen bailiffs to look after the meters, and much extra expense in prosecuting persons for robbing the corporation of their gas apparatus. The committee had done every thing they could to encourage the consumption of gas.

Alderman CURTIS moved—"That, after December 25th, the price of gas be reduced to 3s. 9d. per 1000 feet, and to 3s. 6d. for large consumption." He said, that in October, 1859, the reduction to 4s. 6d. per 1000 feet took place. Since that period there had been an alteration in system of keeping their accounts. Before 1860, the amount placed to the debit of the gas accounts for depreciation was £5000. In 1860, it was £11,372; and, in the past year, £12,179. In like manner, the amount previously set aside for liquidation of the mortgage debt was £7000. In 1859, that was raised to £12,920; in 1860, it was £13,306; in 1861, £18,980; and, in 1862, £19,330. They could not both write off a large amount for liquidation and depreciation, and at the same time have the same available surplus to hand over to the Improvement Committee without gross injustice to the consumers. The available surplus in 1859, when the gas was reduced to 4s. 6d., was £45,689; in 1860, it was £41,179; last year, when there was a further reduction made of £2400 on the street-lamps, the amount was £44,125; but now, when this further reduction was proposed, the available surplus was £45,867, being larger by £180 than it had ever been at any previous reduction. The committee, in making this proposition, had gone upon what appeared to them a safe and sound footing.

Councillor KING took exception to the mode of dealing with the depreciation-fund, and said that Salford and Liverpool were the only places that sold cheaper gas than Manchester, and in those cases the prices were more nominal than real.

Councillor RUMNEY thought it would be better to postpone the question to the next meeting. There had been no opportunity for discussing it in the Gas Committee, for no notice had been given that the subject would be brought forward. It was somewhat unfair to pass this resolution in a committee that had dwindled down to six. Ten per cent. profit was not more than the gas-works ought to realize. They could not confine the reduction to the city; the consumers outside were equally citizens of Manchester.

Councillor ASHMORE was surprised to find Mr. Rumney in the new character of an objector to a reduction of the price of gas.

Councillor RUMNEY: I do not object.

Councillor ASHMORE: The committee were fully prepared to justify the figures upon which they had based their recommendation. Salford gas was equal to that of Manchester, and this city ought not to be behind any other place in economy and efficiency. The Improvement Committee ought to be content with something like £10,000 in these hard times.

Alderman NICHOLLS made an explanation respecting the Improvement Committee funds, but his remarks were inaudible.

Councillor GRUNDY said he was as much in favour of cheap light as any member of the council, but he considered that he should be guilty of dishonesty if he voted for the resolution; other members must satisfy their own consciences, or constituencies; whoever was pleased with his conduct, he was determined to be pleased with it himself. It was comparatively a short time since the last reduction of gas, and there had scarcely been time to realize the results. Alderman Curtis had three times referred to the gas consumers, and the injustice of high prices to them. He begged respectfully to remind Alderman Curtis that he was the representative of the gas owners—the ratepayers—not merely of the gas consumers. The council were the trustees of the gas-works on behalf of the ratepayers, and ought not to consider themselves merely the representatives of the gas consumers. The gas-works were the property of the township, and everybody was a gas consumer. As long as the consumers had gas at a fair price, it was no business of theirs what was done with the profits. Laying those profits out in the improvement of the city was legitimate, and they ought to hesitate before interfering with those profits, and involving the necessity of an improvement-rate. Gentlemen would take what miserable popularity they could get out of the cry of "cheap gas," and, where that was obtained, they left it to somebody else to incur the odium of imposing an improvement-rate. If they knew that the squandering or gradual reduction of the gas profits necessitated an improvement-rate, let them have the manliness to say so. He hoped this matter would not be pressed, because it had been brought on ,to the surprise of many members of the Gas Committee, and much more to the members of the council. He confirmed what councillor King had said respecting the inferiority of the Salford gas. He (Councillor Grundy) burned Manchester gas in his place of business, and Salford gas in his house, and the latter was very deficient in brilliancy.

Alderman CLARK moved, as an amendment,—"That the recommendation be referred back to the Gas Committee for reconsideration." It was not consistent with the dignity of the council that they should deal with a property valued at £539,000 at twenty-four hours notice. The report had not been well considered by the Gas Committee itself. Alderman Curtis was hard driven for an excuse when he made so much of the report being an hour sooner at the town-hall than was stated by the town-clerk. If there were corrections to be made, an hour was not very much for the purpose; and it was not to be assumed as a matter of course that the clerks at the town-hall had nothing else to do than to correct a report of the Gas Committee. The committee might have met sooner, or else have waited another week. Nothing was to be gained by forcing on the matter in so objectionable a manner. It would be monstrous to make a distinction of price beyond the city.

Councillor ROBINSON seconded the amendment, on the ground that a postponement was desirable. There was sufficient in the report to make the council pause before adopting this hazardous recommendation.

Councillor NEILL contended that the subject had been fully considered, and it was every way a desirable recommendation, for there was a prospect of a greater available surplus than ever before. He was surprised that any members of the council should object to a reduction in the price of gas. Previously, the committee had been accused of not being liberal enough; but this morning, forsooth, they were charged with being too liberal. A concession handsomely and graciously made was of more value than when conceded to clamour. The shopkeepers would be considerably benefited by this reduction, and they were not much better off than the unemployed at this moment. They could well afford this reduction, and it was their duty to make it. They ought to regard the question as members of the council, not as members of the Improvement Committee.

Alderman NIELD hoped the amendment would be allowed to pass.

Alderman BENNETT said that certain gentlemen in the council, and he named Alderman Clark, opposed every movement that was for the benefit of the ratepayers.

Alderman CLARK: That is a charge which, if applied to me, I declare to be utterly false.

Alderman BENNETT: It would be to the advantage of the Improvement Committee if they had a rate, and he should not shrink from moving that a rate be laid. He believed that would be the proper course, and that the improvements would then be more satisfactory.

Councillor HOPKINSON was for the motion, but would not object to a postponement of the question.

Councillor STRACEY was also for adjournment, so that they might thoroughly understand their position.

Alderman HEYWOOD gave the advice of a celebrated doctor—"read my book." He referred to his letter on the gas-works, which would enlighten some of the members.

Councillor DYSON was thankful for this instalment of reduction, but wished for more. Manchester, with its manufacturing superiority, ought to be able to compete with Liverpool in the price of gas.

Alderman BANCROFT advised prudence in dispensing their profits. Half a million of money was required to make improvements in Manchester that were urgently called for by the commerce and traffic of the city. There was only one decent business-street east and west (Market Street); and the only one north and south (Deansgate) was a disgrace to the city.

Alderman CURTIS replied; and the votes were taken with the following result:—For the amendment, 14; against, 29. The resolution was therefore carried.

Dr. *General Summary of Receipts and Expenditure on Capital and Revenue Account, June 24, 1862.* *Cr.*

To Balance in the bank, June 24, 1862			£22,972 3 0		
Balance in the treasurer's hands, June 24, 1862			3 7 6		
Ditto of sums owing to and by the committee, including stocks on hand, June 24, 1861			46,046 10 10		
				£69,022 1 4	
Balance of profit and loss account, June 24, 1862, as per statement				7,854 9 7	
Loans received				18,486 7 2	
Materials sold, &c. (capital account), as per statement—					
Gaythorn station			£ 690 7 1		
Rochdale Road station			86 7 6		
				776 14 7	
Amount transferred from revenue account—					
For depreciation of works				12,179 4 11	
For liquidation of mortgage debt				19,330 14 4	
				£127,649 11 11	

By Loans repaid					£15,550 0 0
Improvement and water-works committees—					
Balance of surplus for the year ending June 24, 1861					6,746 11 10
Expenditure on capital account, viz.:—					
Gaythorn station			£9,603 8 11		
Rochdale Road ditto			6,654 4 4		
Every Street ditto			6 3 2		
Street-mains store			2,769 5 7		
Street-mains			5,246 10 2		
Service-pipes			1,061 6 6		
Hired meters			1,292 3 3		
				26,633 3 11	
Balance in the bank, June 24, 1862			£31,328 19 7		
Ditto in the treasurer's hands, June 24, 1862			100 16 2		
				31,429 15 9	
Ditto of sums owing to and by the committee, including stocks on hand, June 24, 1862				47,290 0 5	
				£127,649 11 11	

Dr. *Profit and Loss Account, for the Year ending June 24, 1862.* *Cr.*

To Cannel				£61,017	17	4	
Retort men's wages				11,415	13	8	
Retorts, materials, and setting				5,525	4	0	
Purifying charges				3,341	17	9	
Labourers wages, and repairs, &c., of works—							
Gaythorn station	£3,297	1	5				
Rochdale Road station	3,782	1	7				
Every Street station	6	10	0				
Street-mains	4,179	4	4				
				11,264	17	4	
Salaries—							
Thomas Peacock, in-door superintendent	£375	0	0				
John Leigh, consulting chemist	100	0	0				
John R. Macfarlane, manager, Gaythorn station	375	0	0				
William Brown, late manager, Rochdale Road station	126	5	0				
Henry Lyon, manager, Rochdale Road station (portion of year)	173	6	8				
Thomas Rafferty, surveyor of street-mains	200	0	0				
Jonas Croft, chief clerk	206	0	0				
John Bardsley, chief meter inspector	180	0	0				
John M. Gay, draughtsman (portion of year)	86	13	4				
James Lee, rental-clerk	95	0	0				
John Cocker, ditto (portion of year)	45	13	6				
Thomas E. Harley, ditto (ditto)	5	8	6				
William A. Nield, clerk and collector of general accounts (ditto)	45	0	0				
Oswald Turner, clerk in rental-office (ditto)	76	13	4				
William Stubbs, ditto (ditto)	14	5	0				
Richard G. Walker, ditto (ditto)	11	8	6				
Thomas C. Lever, inspector of fittings	90	0	0				
Charles Dixon, ditto	90	0	0				
City surveyor (portion of salary)	100	0	0				
City treasurer (portion of salary)	100	0	0				
Wages of meter inspectors and assistants, in rental and inquiry offices, at 30s. per week and under	2,501	15	6				
				4,997	9	4	
Collectors poundage, &c.—							
Philip Booth	£230	9	6				
John Ashcroft	210	13	0				
George Crossley	209	19	3				
Robert Hesketh (portion of year)	81	16	6				
Joseph Hinchcliffe (ditto)	118	14	1				
John T. Banks	167	12	1				
Charles Nickson	166	6	5				
James Whittaker	114	10	5				
Henry G. Warburton (portion of year)	77	18	6				
William A. Nield (ditto)	69	4	4				
Oswald Turner (ditto)	26	6	8				
William Stubbs (ditto)	25	10	0				
James Shaw, receiver of rentals paid in the office	170	10	0				
	£1,669	10	9				
Collection of arrears—							
William A. Nield	12	10	9				
Oswald Turner	7	11	6				
William Stubbs	4	13	4				
John Cocker	4	12	9				
				1,698	19	1	
Chief and other rents and taxes—							
Chief rents	£269	11	0				
Rents, rates, and taxes on offices, and on arches used as stores	578	2	1				
Rates on stations and street-mains	2,611	9	2				
				3,459	2	3	
Income-tax				2,044	7	4	
Amount transferred to capital account for depreciation of works—							
Gaythorn station—							
4 per cent. on buildings (£41,986. 8s. 2d.)	£1,679	9	1				
5 per cent. on apparatus (£28,032. 1s. 10d.)	1,401	12	1				
	£3,081	1	2				
Rochdale Road station—							
4 per cent. on buildings (£76,772. 2s. 11d.)	£3,070	17	8				
5 per cent. on apparatus (£40,484. 11s. 9d.)	2,024	4	7				
	5,095	2	3				
Every Street station—							
4 per cent. on buildings (194. 7s. 7d.)	7	15	6				
Street-mains store (Poland Street)—							
4 per cent. on buildings (£80. 10s. 4d.)	3	4	4				
Street-mains—							
2½ per cent. on main-pipes (£153,739. 6s. 9d.)	3,843	9	8				
Hired meters and fittings—							
10 per cent. on £1209. 8s.	120	18	0				
Meter-proving apparatus—							
10 per cent. on £276. 19s. 6d.	27	14	0				
				12,179	4	11	
Stationery and advertising				316	17	2	
Law stationery, receipt, postage, and deed stamps, &c.				152	15	3	
Clothing for inspectors, &c.				150	17	6	
Subscriptions to Infirmary, Eye Hospital, and Steam Boiler Association, &c.				66	10	0	
Miscellaneous expenses				211	4	9	
Bad debts and allowances				906	5	8	
Balance carried down				42,667	7	1	
				£161,416	10	5	

By Gas rental—							
Within the city—							
Private consumers	£114,449	7	9				
Meter-rents	230	3	2				
Public lamps	9,357	12	0				
				£124,037	2	11	
Beyond the city—							
Private consumers	£17,802	10	9				
Meter-rents	13	19	4				
Public lamps	1,456	16	6				
				19,273	6	7	
				£143,310	9	6	
Coke, tar, and ammonia-water				17,891	3	11	
Balance on sale of meters				117	16	1	
Interest allowed by bankers (less commission, &c.)				97	0	11	
				£161,416	10	5	

To Interest on loans, &c. (less income-tax)				£15,482	3	2	
Amount transferred to capital account towards liquidation of mortgage debt				19,330	14	4	
Surplus payable to the improvement department				7,854	9	7	
				£42,667	7	1	

By Balance brought down, being gross profit on the year's working				£42,667	7	1	
				£42,667	7	1	

Statement of Assets and Liabilities, June 24, 1862.

PERMANENT ASSETS.

Lower King Street station—			
Land (now let to the Watch Committee at an annual rent of £300)			£7,500 0 0
Gaythorn station—			
Land, buildings, and apparatus, as per last report—			
Land	£55,435 6 10		
Buildings	41,986 8 2		
Apparatus	28,032 1 10		
		£125,453 16 10	
Less—			
Apparatus sold, &c. (1862)	£ 690 7 1		
Depreciation	3,081 1 2		
		3,771 8 3	
		£121,682 8 7	
One year's outlay to June 24, 1862—			
Yard-mains	£ 10 6 0		
New governor for Mosley Street main	23 10 6		
No. 2 retort-house	167 17 9		
No. 1 purifying-house	294 10 10		
No. 2 ditto	56 5 3		
Small ammonia tank	38 9 4		
No. 4 gasholder ditto	187 17 9		
No. 5 gasholder ditto	57 15 0		
Diversion and covering over of river (on account)	8,876 16 6		
		9,603 8 11	
			131,285 17 6
Rochdale Road station—			
Land, buildings, and apparatus, as per last report—			
Land	£20,191 15 2		
Buildings	76,772 2 11		
Apparatus	40,484 11 9		
		£137,448 9 10	
Less—			
Apparatus sold, &c. (1862)	£ 86 7 6		
Depreciation	5,095 2 3		
		5,181 9 9	
		£132,267 0 1	
One year's outlay to June 24, 1862—			
Land	£ 499 7 3		
Valves, &c.	119 15 5		
New station-meter	572 15 0		
Yard-mains	83 9 4		
No. 4 gasholder	3 14 8		
No. 5 gasholder tank	278 1 8		
No. 5 gasholder	2,661 6 4		
No. 4 engine	160 4 10		
No. 3 cannel-shed (on account)	567 9 4		
No. 2 retort-house, ditto	825 13 1		
No. 2 purifying-house, ditto	291 13 6		
Boundary-wall, ditto	590 13 11		
		6,654 4 4	
			138,921 4 5
Every Street station—			
Land, buildings, and apparatus, as per last report—			
Land	£3,090 1 0		
Buildings	194 7 7		
		£3,284 8 7	
Less—			
Depreciation (1862)		7 15 6	
		£3,276 13 1	
One year's outlay to June 24, 1862		6 3 2	
			3,282 16 3
Street-mains store (Poland Street)—			
Outlay, as per last report	£ 80 10 4		
Less—			
Depreciation (1862)	3 4 4		
		£ 77 6 0	
One year's outlay to June 24, 1862—			
Land	£1,406 0 0		
Buildings	1,303 5 7		
Apparatus	60 0 0		
		2,769 5 7	
			2,846 11 7
Street-mains—			
Main-pipes, as per last report	£153,739 6 9		
Less—			
Depreciation (1862)	3,843 9 8		
		£149,895 17 1	
One year's outlay to June 24, 1862		5,246 10 2	
			155,142 7 3
Service-pipes laid, as per last report		£7,216 11 6	
Moiety of year's outlay charged to capital account		1,061 8 6	
			8,278 0 0
Hired meters, &c.—			
Outlay, as per last report	£1,209 8 0		
Less—			
Depreciation (1862)	120 18 0		
		£1,088 10	
One year's outlay to June 24, 1862		1,292 3 3	
			2,380 13 3
Meter-proving apparatus—			
Outlay as per last report		£ 276 19 6	
Less—			
Depreciation (1862)		27 14 0	
			249 5 6
Total amount of permanent assets			£449,886 15 9

FLOATING ASSETS.

Cannel, retorts, and other materials, on hand—revenue account		£30,016 8 8	
Gas-rents and sundry accounts due to the committee—			
Revenue account		27,314 0 11	
Extension ditto		41 9 0	
Balance in the bank		31,328 19 7	
Ditto in the treasurer's hands		100 16 2	
		89,401 14 4	
		£539,288 10 1	
Excess of assets, June 24, 1862		£126,591 4 6	
Ditto, ditto, 1861		107,260 10 2	
Increase, being the amount charged upon the profit for the past year towards liquidation of the mortgage debt, and carried to capital account		£19,330 14 4	

LIABILITIES.

Mortgage debt—			
Act of 1844—1st charge	£37,450 0 0		
Ditto—2nd ditto	5,3077 18 4		
Act of 1853	9,400 0 0		
Act of 1854	70,450 0 0		
Act of 1858	179,470 2 4		
Total amount secured by mortgage		£349,848 0 8	
Sums advanced, not secured by mortgage at this date—			
Paving, &c., Committee	£10,000 0 0		
Indian Relief-Fund Committee	8,000 0 0		
Burial Board Fund	3,000 0 0		
Admiral Duff's Charity	1,058 1 6		
Sundry persons	10,633 5 8		
	32,691 7 2		
			£382,539 7 10
Purchases of land, the purchase-money being left in the hands of the corporation, at interest			11,621 10 0
Sundry accounts owing—revenue account			7,412 11 5
Ditto ditto—extension account			1,952 14 1
Deposits in hand			1,316 12 8
			£404,842 16 0
Surplus for the year ending June 24, 1862, payable to the improvement department			7,854 9 7
Balance, being excess of assets			126,591 4 6
			£539,288 10 1

[Appendix A.]

Statement of the Lamp and Private Rental (including Meter-Rents) derived from the Townships within and beyond the City respectively, for the Years 1860-61 and 1861-2.

	Half Year ending Dec. 25, 1860.			Half Year ending June 24, 1861.			Total for the Year 1860-1.			Half Year ending Dec. 25, 1861.			Half Year ending June 24, 1862.			Total for the Year 1861-2.		
Within the city.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.
Township of Manchester—																		
Private rental	41706	10	2	38481	6	2				36025	2	3	37569	12	0			
Public lamps	3256	9	3	3041	6	11				3265	9	11	2259	16	0			
	44962	19	5	41522	13	1	86485	12	6	39290	12	2	39829	8	0	79120	0	2
Other townships—																		
Private rental	21793	12	9	20646	7	2				19847	9	11	21237	6	9			
Public lamps	2081	3	9	2074	4	6				2031	1	4	1801	4	9			
	23874	16	6	22720	11	8	46595	8	2	21878	11	3	23038	11	6	44917	2	9
Total within the city	68837	15	11	64243	4	9	133081	0	8	61169	3	5	62867	19	6	124037	2	11
Beyond the city.																		
Private rental	8821	9	2	9158	5	0				8852	19	8	8963	10	5			
Public lamps	585	18	0	677	6	5				713	2	6	743	14	0			
Total beyond the city	9407	7	2	9835	11	5	19242	18	7	9566	2	2	9707	4	5	19273	6	7
Gross rental	78245	3	1	74078	16	2	152323	19	3	70735	5	7	72575	3	11	143310	9	6

	Within the city.	Beyond the city.	Total.
Gross rental, 1860-61	£133,081 0 8	£19,242 18 7	£152,323 19 3
Ditto, 1861-62	124,037 2 11	19,273 6 7	143,310 9 6
	Decrease. £9,043 17 9	Increase. £ 30 8 0	Decrease. £9,013 9 9

[Appendix B.]

Table showing the Number of each Size of Meter in use on the 24th of June, 1861 and 1862, including those on Hire.

Size of Meter.	Townships within the City.												Townships beyond the City.		Total.		Decrease or Increase during the Year.	
	Manchester.		Chorlton-upon-Medlock.		Hulme.		Ardwick.		Beswick.		Cheetham.		Total within the City.					
	1861.	1862.	1861.	1862.	1861.	1862.	1861.	1862.	1861.	1862.	1861.	1862.	1861.	1862.	1861.	1862.	1861.	1862.	Dec.	Inc.
1 light	121	118	9	19	50	43	23	22	..	11	7	7	210	220	9	19	219	239	..	20
2 lights	5421	6105	1734	1988	3589	4048	691	814	113	144	1074	1229	12622	14319	1662	2040	14284	16359	..	2075
3 ,,	5050	4944	1680	1693	1876	1888	488	566	41	43	911	924	10046	9998	1057	1093	11103	11091	12	..
5 ,,	2206	2211	802	825	362	367	160	163	16	17	354	395	3900	3978	659	701	4559	4679	..	120
10 ,,	1022	1065	145	160	87	81	50	52	1	7	88	84	1393	1449	241	262	1634	1711	..	77
20 ,,	479	500	37	33	24	24	21	21	5	5	16	18	582	601	80	86	662	687	..	25
30 ,,	184	195	11	12	10	11	1	1	1	1	17	19	224	239	22	28	246	267	..	21
45 ,,	99	86	5	5	6	6	5	5	..	..	1	..	116	102	11	11	127	113	14	..
50 ,,	23	34	3	3	..	..	2	3	..	1	..	4	28	45	12	10	40	55	..	15
60 ,,	59	57	6	6	5	7	2	2	6	..	1	1	70	73	3	7	73	80	..	7
80 ,,	46	48	6	5	5	5	2	2	..	..	..	..	59	60	4	4	63	64	..	1
100 ,,	101	103	12	13	5	5	2	2	..	..	5	4	125	127	13	16	138	143	..	5
150 ,,	14	18	3	4	1	1	..	..	..	..	..	..	18	23	2	2	20	25	..	5
200 ,,	1	1	..	..	..	1	..	..	..	..	..	..	1	2	1	1	2	3	..	1
300 ,,	1	1	1	1	..	..	..	..	1	1	1	1	4	4	..	..	4	4	..	..
Total	14818	15486	4454	4767	6020	6487	1447	1593	184	230	2475	2677	29398	31240	3776	4280	33174	35520	26	2372

Statement showing the Number and Sizes of Meters on Hire on June 24, 1862 (included in the above Table).

	1-Light.	2-Light.	3-Light.	5-Light.	10-Light.	Total.
Within the city	209	948	107	18	3	1285
Beyond the city	19	100	10	3	..	132
Total.	228	1048	117	21	3	1417

Deduct decrease. 26

Net increase. 2346

[Appendix C.]

Statement of Pipes Laid, up to June 24, 1861.

	Diam. 2 in.	Diam. 3 in.	Diam. 4 in.	Diam. 5 in.	Diam. 6 in.	Diam. 7 in.	Diam. 8 in.	Diam. 9 in.	Diam. 10 in.	Diam. 12 in.	Diam. 14 in.	Diam. 15 in.	Diam. 18 in.	Diam. 20 in.	Diam. 24 in.	Total Length.
Within the city.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.
Manchester	36693	62352	19260	10759	13470	721	7607	5981	..	9089	3696	4611	1830	395	3136	178973
Hulme	24801	12894	5831	472	2833	..	819	1443	43	2332	1040	452	288	..	103	53356
Chorlton-upon-Medlock	22460	19762	3737	3376	1909	..	4683	1003	..	3033	949	563	914	..	..	62394
Cheetham	9685	8977	2827	98	884	35	255	3547	..	1650	..	..	..	..	..	27958
Ardwick	8576	6449	1278	545	3593	..	630	..	1198	1109	758	..	..	..	..	24136
	102215	110414	32933	15250	22694	756	13994	11974	1241	17213	5843	5631	3032	388	3239	346817
Beyond the city.	26039	32583	12361	5677	7458	280	8741	5551	14	4396	..	..	..	..	..	103100
Total	128254	142997	45294	20927	30152	1036	22735	17525	1255	21609	5843	5631	3032	388	3239	449917

Pipes Laid and Taken up during the Year ending June 24, 1862.

	Diam. 2 in.	Diam. 3 in.	Diam. 4 in.	Diam. 5 in.	Diam. 6 in.	Diam. 7 in.	Diam. 8 in.	Diam. 9 in.	Diam. 10 in.	Diam. 12 in.	Diam. 14 in.	Diam. 15 in.	Diam. 18 in.	Diam. 20 in.	Diam. 24 in.	Total Length.
Within the city.	Yds.	Yds	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.
Manchester	6516	1746	429	423	51	..	3	543	..	1038	..	3	21	..	..	10773
Hulme	3674	75	48	15	..	..	..	48	..	219	228	..	..	..	..	4307
Chorlton-upon-Medlock	884	162	114	..	..	..	..	..	..	..	..	..	..	..	..	1160
Cheetham	1990	705	21	..	..	..	..	..	..	162	..	..	..	..	..	2878
Ardwick	1146	..	228	..	..	..	..	..	..	..	..	..	..	..	..	1374
	14210	2688	840	438	51	..	3	591	..	1419	228	3	21	..	..	20492
Beyond the city.	5152	1908	1983	198	3156	..	195	3	..	459	..	..	..	..	..	13054
	19362	4596	2823	636	3207	..	198	594	..	1878	228	3	21	..	..	33546
Taken up	476	2995	25	248	217	..	291	906	..	237	..	..	313	..	6	5714

Summary.

Net increase during the year. 27832

	Diam. 2 in.	Diam. 3 in.	Diam. 4 in.	Diam. 5 in.	Diam. 6 in.	Diam. 7 in.	Diam. 8 in.	Diam. 9 in.	Diam. 10 in.	Diam. 12 in.	Diam. 14 in.	Diam. 15 in.	Diam. 18 in.	Diam. 20 in.	Diam. 24 in.	Total Length.
Pipes laid up to June 24, 1861—	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.
Within the city	102215	110414	32933	15250	22694	756	13994	11974	1241	17213	5843	5631	3032	388	3239	346817
Beyond the city	26039	32583	12361	5677	7458	280	8741	5551	14	4396	..	..	..	..	..	103100
Pipes laid during the year ending June 24, 1862—	128254	142997	45294	20927	30152	1036	22735	17525	1255	21609	5843	5631	3032	388	3239	449917
Within the city	14210	2688	840	438	51	..	3	591	..	1419	228	3	21	..	..	20492
Beyond the city	5152	1908	1983	198	3156	..	195	3	..	459	..	..	..	..	..	13054
	147616	147593	48117	21563	33359	1036	22933	18119	1255	23487	6071	5634	3053	388	3239	483463
Deduct taken up	476	2995	25	248	217	..	291	906	..	237	..	..	313	..	6	5714
Net total	147140	144598	48092	21315	33142	1036	22642	17213	1255	23250	6071	5634	2740	388	3233	477749*

* 477,749 yards, or 271¼ miles and 349 yards.

ANOTHER BALLOON ASCENT, FOR SCIENTIFIC PURPOSES, FROM WOLVERHAMPTON.

A VOYAGE SIX MILES HIGH.

One of the most successful balloon ascents that has ever been made, for either the objects of science or the purposes of pleasure, was effected on Friday, the 5th instant, under the auspices of the British Association. On that day, Mr. Glaisher, of the Greenwich Observatory, and Mr. Coxwell, the well-known aëronaut, made their third ascent from the gas-works on the Stafford Road, Wolverhampton, their object being to take observations of the condition of the atmosphere, and ascend to as great a height as it was possible to attain. Their success has, indeed, been wonderful; they reached an altitude a mile and a half beyond that ever attained by any other aëronaut, and got into that region of the upper air in which it is impossible for animal life to exist. Mr. Coxwell was, of course, the manager of the aërial machine, and the attention of Mr. Glaisher was devoted to the reading and the registering of his instruments. These consisted of the same hygrometers, barometers, and thermometers that he used on his last journey, with the addition of a 3-feet barometer, which had been specially constructed for the voyage, and made with a tube on the truest principles of calibre that Messrs. Negretti and Zambra could manufacture. Mr. Glaisher also took up with him a stereoscopic camera, furnished by Dr. Hill Norris, of Birmingham, and provided with a set of extremely sensitive dry plates, for the purpose of taking a photograph of the appearance of the clouds; and, with a view to watch the effect of the upper air on winged life, Mr. Glaisher likewise provided himself with half-a-dozen pigeons, the experiments upon which proved of a most interesting character.

The balloon will contain 90,000 feet of gas, but, on the present occasion, it was only about two-thirds filled—60,000 cubic feet; and, thanks to the arrangements of Mr. Proud, the gas company's engineer, it was of a much more buoyant nature than any that has before been used. This buoyancy contributed in no small degree to the success of the journey, and for securing so important a desideratum Mr. Proud was warmly complimented. The lightest gas that has before been used was 0·349; on this occasion it was 0·340—and gas of an ordinary burning character weighs, we may state, about 0·470. By twelve o'clock, the balloon had been filled to the extent the aëronauts required, and, in an hour afterwards, the instruments were arranged in the car, and everything was ready for a start. At 1.3 p.m., the balloon was set at liberty, and it rose slowly and majestically, taking a course almost S.W.—in the direction of the Clee Hills and Ludlow. During the ten minutes or quarter of an hour that it remained in sight, the balloon was seen by hundreds of the people of Wolverhampton and the district; but suddenly, at an altitude of about a mile, it became lost in a belt of dark grey clouds that enshrouded the earth from the fiercer rays of the sun, and shut out a beautiful sea of blue into which an occasional glimpse was permitted towards the horizon. These clouds, Mr. Glaisher states, were 2000 feet thick, and seemed to be saturated with as much water as they could contain. As the balloon rose, this dampness gradually diminished, and a greater difference became apparent between the dry and wet bulb, and, on reaching their greatest altitude, the aëronauts observed no dew whatever. Immediately, on passing through the clouds, the scene which presented itself was grand beyond description. The travellers seemed to have got into another world. The beginning of their journey had been performed in an atmosphere that was darkened and humid; but now they suddenly shot up into an expanse of cloudless, ethereal blue. With the exception of through one little spot, that seemed to be several miles ahead of them, the earth was entirely lost to view, though below them was the semblance of a planet in the clouds through which they had just penetrated. It was like looking on a country whose frozen surface extended as far as the eye could reach; deep crevasse and dark ravine contrasted boldly with the lighter and more fleecy clouds that towered aloft, and caught the streaming sunshine. Some were white, as pure as snow; others black, dark grey, and of shapes as fantastic as imagination can realize. One would rear its lofty head on a baseless stem, and throw its neighbours into a shade as black as night; another, like a bald bluff crag, would sail with a majesty becoming its immensity through minor clouds surrounding it; and a third, more light and delicate, would change its place and hue as often as the voyagers could observe it. Added to this was a strong sunlight which, for a few moments, became so intense that Mr. Glaisher had to shade his instruments. When a favourable opportunity presented itself, the camera was brought into requisition, but the balloon was ascending with such velocity—owing to the expansion of the gas, and the lighter character of atmosphere—that Mr. Glaisher failed to obtain a single picture. At three miles high the machine was rising at a fearful pace; the 60,000 feet of gas had expanded to 90,000, and was oozing out of the safety-valve at the bottom of the balloon. Mr. Coxwell, however, fearing that they might be approaching the sea, and having nothing but supposition to judge by, determined to make the best of his time; and, though the velocity was such as to give a rotary motion to the balloon, he threw out more ballast, and higher and higher rose the voyagers, attaining an altitude where the cold became intense, and where Mr. Coxwell, who, from having undergone great exertion, found the power of breathing extremely difficult and oppressive. By Mr. Glaisher, however, no such unpleasant sensation was experienced—not even the intense cold, owing, no doubt, to the protection afforded to his hands by a pair of gloves, and the fact that he remained seated in a state of perfect quiet. We may mention that, at one time, the balloon was ascending with such rapidity that it created a rush of wind, which the voyagers at first believed to arise from a current of air into which they were just entering. But this was not the case, for the same current prevailed throughout the whole of the journey, and apparently at a uniform speed.

When the aëronauts were at a height of three miles, they threw out the first pigeon, and it fell earthwards, like a lump of lead. A few minutes afterwards, a second pigeon was thrown out, but, after gallantly attempting to keep itself on the wing, it, too, fell far away below the car, and out of sight of the aëronauts; the same results were observable in the case of a third pigeon; but a fourth, which was set at liberty at a height of four miles, alighted on the top of the balloon, and was lost sight of; what became of it afterwards, the voyagers are unable to say. The two remaining pigeons were brought to the ground. On examining them, one was found to be dead; the other, a carrier, was greatly exhausted, but able to perch on Mr. Glaisher's finger. After it had rested there, he threw it up into the air, and making a short circle, it returned, and actually alighted on his hand. A piece of string and a message were then attached to its neck; and, in a few minutes, the poor creature commenced pecking at the string, and, showing other signs of increasing animation, it was again thrown into the air, and started off in the direction of Wolverhampton. We hear, however, that the bird never reached home. At a height of about four miles, Mr. Coxwell heard faint indications of terrestrial sounds; but Mr. Glaisher observed none after he had reached an altitude of a mile and a half; when at that height, he distinctly heard the report of a gun; the only sound which he perceived afterwards was the rushing noise made by the balloon, as it sped upwards.

When the voyagers had attained an altitude of about five miles, Mr. Glaisher began to feel those symptoms that had well nigh proved dangerous to him, but in spite of which he persevered, with a wonderful coolness that few men possess, and which, of all things, is so important a requisite to an aëronaut making observations of such importance to science and meteorology. Few, indeed, who possess a knowledge of atmospheric phenomena could have watched and recorded the registering of such a number of instruments as those laid out on Mr. Glaisher's table; and fewer still could have done so at the elevation at which Mr. Glaisher and his companion were then soaring. The thermometer below zero, and gradually descending, an atmosphere so thin that the least exertion caused breathing to be a matter of extreme pain and difficulty, and a scene around and above such as eye had never before beheld—these circumstances, together with the danger of their position, their life, as it were, dependent on a thread, would try the stoutest heart and the coolest and steadiest nerve. But Mr. Glaisher and Mr. Coxwell were equal to the occasion; and, though Mr. Glaisher subsequently became unconscious, he did so without betraying the slightest symptoms of anxiety or uneasiness, or producing any such effects on his companion. Mr. Coxwell's power of endurance seemed almost wonderful, and would become an athlete, for, notwithstanding his exertions, climbing in and out of the rigging, lifting the sand-bags, and discharging nearly 2000 lbs. of ballast, he was able to withstand the effects of the atmosphere, and to save himself and his companion from being swept into eternity. At the height of about five miles, Mr. Glaisher entered his last ascending register, recording the temperature at *minus* 5°, or 37° below zero, being a temperature about 97° below that at the earth's surface. Mr. Glaisher then found that his eyesight began to fail, and he asked Mr. Coxwell to assist him in reading the instruments. Mr. Coxwell, however, was wanted in the rigging to arrange some of the cordage, and, seeing that their lives were more important than the discoveries of science, Mr. Coxwell at once got into the ring of the balloon, to attend to his own particular duties. Mr. Glaisher, in the meantime, was using his spectacles and magnifying glasses, but he could ascertain nothing except that the barometer stood at about 10 inches, which would indicate a height of 5¼ miles. He had previously felt himself gradually becoming unconscious, and had made an entry to that effect in his minute-book; but, when he attempted to enter the registering of the barometer, he found that he could not write. Thinking a little stimulant would revive him, he reached out his hand to a brandy-flask that was not more than a foot from where he sat; but he discovered he was powerless, and gradually he became unconscious; the last object that he saw was a dim outline of Mr. Coxwell's figure, in the rigging of the balloon. Directly after this, Mr. Coxwell seems to have observed the condition of his companion. He states that Mr. Glaisher was leaning back on his seat, his feet outstretched, his mouth open, his arms by his side, but his countenance perfectly calm and placid. He decended into the car, and tried to revive him; and, seeing that he was not in a condition that is popularly known as "very far gone," he asked him to try and take another observation. Mr. Glaisher, however, could not understand him; and Mr. Coxwell also beginning to feel symptoms of faintness, and fearing that he, too, might become unconscious—for the balloon was still rapidly ascending—he began to make preparations for lowering the machine. On attempting to seize the valve-string, he found that he had lost the use of his hands, and that they had gone perfectly black. Fortunately, Mr. Coxwell is a dentist, as well as an aëronaut; and, believing in the power of his teeth, which, he assures us, are, luckily, not artificial, he seized the cord with his mouth, and, after a desperate pull, he opened the valve, and the balloon began its descent. In the course of a few minutes, Mr. Glaisher revived, and by the time that he reached the earth the effects of his faintness had entirely disappeared. The same may be said of Mr. Coxwell, except that his hands were somewhat discoloured. While Mr. Glaisher was unconscious, Mr. Coxwell happened to cast his eye on the needle of the aneroid barometer, and when Mr. Glaisher recovered he informed him of its position. From this observation, Mr. Glaisher estimates that they attained a height of fully six miles, and this calculation is to some extent supported by the self-registering thermometer. At a height of five miles, the mercury stood at *minus* 5° or 37° below zero; the self-registering thermometer indicated that it had been as low as *minus* 20° or 52° below freezing point; and, again, it must be remembered that the balloon was ascending very rapidly at the time Mr. Glaisher became unconscious, and continued at that velocity for several minutes. Among the articles taken up in the balloon was a quantity of water, and till they reached a height of five miles Mr. Glaisher kept it from freezing by occasionally stirring it with a small ladle. When Mr. Glaisher recovered his consciousness, he found that the water had been frozen into a solid block of ice, and it remained in this condition for an hour and a half after he reached the earth. Ozone was observable, the test-papers of Dr. Moffat indicating its presence much more distinctly than the other kind of papers; it would probably be present to the extent of about six or seven of the scale. The atmosphere beyond the clouds was extremely dry, and but for this circumstance the cold must have been felt much more intensely.

The descent was made at 3·20, in a field belonging to Mr. T. Keysall, of Cold Weston, about seven and a half miles from Ludlow, and twenty-eight miles from Wolverhampton. Mr. Keysall gave the aëronauts every assistance. They reached Ludlow the same evening, telegraphed the result of their journey to Wolverhampton, and next day returned to that place and started for London. Mr. Glaisher states that the observations generally were a confirmation of those made during the previous ascents. Each voyage, however, had its own particular feature, and Mr. Glaisher begins to consider that before the British Association can secure the object it seeks, it will be necessary to make observations at all seasons of the year, and he believes, also, that the most interesting of these observations will be obtained at a height of about four miles.

In one respect, however, the last journey seems pretty conclusive, the height at which it is possible for animal life to exist. Had it not been for the presence of mind of Mr. Coxwell, which seems never to fail him in any difficulty, the voyagers would have shot up into an atmosphere so thin that respiration could not be sustained, and in the end the expansion of gas would have probably burst the balloon; or, if the safety-valve had been sufficiently large to allow for that expansion, they might have been carried into space, and numbered among the victims on the altar of science. Such a fate, though, was not in store for them; a guiding Providence allowed them to descend in safety, and let us hope that the journeys they have made in pursuit of knowledge may be attended with becoming commendation and reward.

The ascents of Gay-Lussac and Mr. Green sink into comparative insigni-

ficance with the half dozen voyages that have been made by Mr. Coxwell and Mr. Glaisher. Gay-Lussac attained an elevation of over four miles, with the thermometer at 20°; and Mr. Green reached a similar altitude. In the first ascent from Wolverhampton, Mr. Coxwell and Mr. Glaisher reached an elevation of four miles 1685 yards; second ascent from Wolverhampton, four miles 700 yards; third ascent from Wolverhampton, six miles. The same gentlemen, from the Crystal Palace, have reached altitudes of three miles 200 yards, one mile 667 yards, and one mile 504 yards. The ascent from Wolverhampton on Friday is the last that Mr. Glaisher contemplates—that is, to any great height—before the next meeting of the British Association.

DR. J. NORTHCOTE VINEN'S REPORT ON THE GAS SUPPLIED BY THE SURREY CONSUMERS COMPANY:—

1862. Week ending.	Number of Observations.	Maximum Light. Candles.	Minimum Light. Candles.	Average Light. Candles.
Sept. 6	4	13·55	12·93	13·29
„ 13	4	14·49	12·85	13·63

The average volume of hydrocarbons was 4·0 per cent.; carbonic acid averaged 0·75 per cent. There was no trace either of sulphuretted hydrogen or of ammonia. The maximum pressure was 20/10ths; the minimum, 6/10ths.

GAS IN NEW NEW ZEALAND.—A company has been formed for lighting Auckland, the seat of the Government of this colony, with coal-gas, and a contract has been entered into with Mr. A. K. Smith, of Melbourne, to erect the whole apparatus required, for the sum of £16,000.

FRAUDULENT USE OF GAS IN STOCKPORT.—Two consumers, John Goodison of 6, Thomas Street, and James Bailey, of 21, Stewart Street, having been detected in fraudulently consuming gas, have publicly apologized and expressed their thanks to the gas committee for kindly consenting not to prosecute them, and have each given the sum of two guineas to the Stockport infirmary.

THE BITUMENIZED PAPER-PIPE COMPANY.—An order has been made by the Court of Bankruptcy, for the winding up of this company, upon the petition of Mr. W. Boord, distiller, one of the shareholders.

FORMATION OF AN EXPLOSIVE COMPOUND IN COPPER GAS-PIPES.—Dr. T. L. Phipson, in a letter to the *Times*, says—"It has been discovered that, when gas-pipes constructed of copper or bronze have been long submitted to the action of ordinary coal-gas, an explosive compound of copper and acetylen (one of the many ingredients of coal-gas) is formed. When dry, this compound detonates with extraordinary violence, as soon as it is rubbed, struck, or heated. Already, some accidents have occurred; and some workmen have lost their lives, while cleaning large copper gas-pipes, from this circumstance. No such explosive compound appears to be formed when iron or lead is used. It is evident that large copper gas-pipes are unsafe; and that some other metal should be substituted for the copper, as the latter may give rise to explosion at any moment. As concerns small pipes constructed of this metal, they should not be allowed to get foul; and, when about to be cleaned, hydrochloric acid should be introduced into them, for about ten minutes, before they are submitted to any heat or friction. Hydrochloric acid decomposes the explosive compound, combines with the copper, and puts the gas acetylen in liberty. The acid may then be washed out with hot water."

TAX ON GAS IN AMERICA.—The *Scientific American* states that a notice, of which the following is a copy, has been left at their office, and at the dwellings, stores, shops, and offices of all the gas consumers supplied by the New York Gas Company:—"Office of the New York Gaslight Company, Aug. 1, 1862.—In conformity with the Act of Congress, the United States tax of one and a half cent per 100 cubic feet will be added to all bills for gas consumed after the first day of September next.—Thomas K. Lees, Secretary." A similar notice has been issued by the Manhattan Gas Company to its consumers, upon which the *Scientific American* remarks: "We object to the gas companies in this or any other city transferring government tax from themselves to the consumers. It was not the intention of the framers of the law that the consumers should pay this tax, but that the companies who furnish the gas should pay it as their proportion of the income-tax. If the consumers are obliged to pay the tax, the gas company is relieved from the assessments which nearly all other classes in the community are unable to shirk."

Price Current.

CASTINGS.—*Per Ton.*

Average Weight of Cast-iron Gas-pipes, per Yard.

1¼ in.	2 in.	2½ in.	3 in.	4 in.	5 in.	6 in.	7 in.	8 in.	9 in.	10 in.	12 in.
16	21	28	33	51	70	89	107	126	149	177	208 lb.

Retail Prices are 5 to 10 per cent. higher.	London.			Glasgow.			Newcastle			Wales.			Yorkshire, Derbyshire, and Staffordshire.		
	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.
Pig Iron, No. 1, G.M.B.	3	7	6	2	16	0	2	17	6	3	0	0	3	5	0
1¼ and 2-inch Socket-pipes	7	0	0	6	0	0	6	5	0	6	10	0	6	15	0
2½ and 3-inch ditto	6	10	0	5	10	0	5	15	0	6	0	0	6	5	0
5 and 5-inch ditto	6	0	0	5	0	0	5	5	0	5	10	0	5	15	0
6 inches and upwards ditto	5	15	0	4	15	0	5	0	0	5	0	0	5	10	0
Retorts, 1st fusion, hot blast	5	10	0	4	10	0	4	15	0	5	0	0	5	5	0
Ditto, 2nd ditto, cold ditto	6	10	0	5	5	0	5	10	0	6	0	0	6	5	0
Tank-plates, ¾ thick and above	6	0	0	5	0	0	5	5	0	5	10	0	5	10	0

WROUGHT-IRON TUBING,

Subject to 40 per cent. Discount.

	2 in.		1½ in.		1¼ in.		1 in.		¾ in.		½ in.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Patent Welded Tubes, from 2 to 12 feet—per foot	1	8	1	0	0	10	0	7	0	5	0	4½
Ditto ditto, from 6 inches to 18 inches—each	3	0	2	0	1	9	1	3	1	0	0	9
Connecting-pieces, or Long Screws	3	6	2	3	2	0	1	6	1	2	0	11
Bends, Springs, and Elbows (wrought iron)	3	9	2	3	1	9	1	0	0	10	0	8
Tees, wrought or cast	4	0	2	6	2	0	1	6	1	1	0	10
Crosses, ditto	4	6	3	0	2	6	2	0	1	6	1	2
Iron Cocks	17	6	9	6	7	6	4	6	3	3	2	6
Ditto, with brass plug	28	0	16	0	13	0	7	0	5	6	4	6
Diminishing Sockets, Caps, Plugs, and Nipples	1	3	0	9	0	8	0	6	0	5	0	4
Plain Sockets	1	0	0	8	0	7	0	5	0	4	0	3
Syphons, 2-quart	15	0	14	0	13	6	13	0	12	0	—	

COALS.—*Per Ton.*

Newcastle.—Unscreened.		*Scotch Cannel.*	
Whitwell Primrose	6s. 9d.	Boghead (at Leith)	45s. 0d.
Medomsley, Eighton Moor, and Burnhope	7 0	Kirkness, best	23 0
Pelaw	7 3	Capeldrae, 1st quality	20 0
New Pelton, Pearcth, South Pelaw, Washington Hutton, and South Pearcth	7 6	Ditto, 2nd ditto	12 6
Pelton	7 9	Leamahago (at Glasgow)	25 0
Ramsay's Newcastle Cannel	16 0	Ditto (at Leith)	27 6
		Arniston	27 6
		Wemyss	20 0
		Knightswood	18 0
		Pirnie	14 0

FREIGHTS.

Coastwise—Newcastle.—Per Ton.		*Foreign.—Per Keel.*	
Chatham and Rochester	6s. 6d.	Barcelona	£26 0s.
Cork	9 9	Bordeaux	16 0
Dover and Folkestone	6 9	Boulogne and Calais	£8. 5s. to 8 10
Dublin	9 9	Cadiz	15 10
Exeter Quay	9 3	Cronstadt	—
Ipswich	5 9	Copenhagen	10 0
London (Pool)	6 6	Genoa	23 10
Lowestoft and Yarmouth	4 9	Hamburg	9 0
Lynn	—	Havre de Grace	£10. 5s. to 10 10
Portsmouth and Southampton	8 0	Leghorn	23 0
Plymouth	8 9	Lisbon	16 0
Shorcham	7 9	Rotterdam	8 15
Whitstable	7 0	Stettin	11 0
Weymouth	8 6	Trieste and Venice	£23. to 25 0

SUNDRIES.

Best Newcastle Fire-bricks—per 1000	£3. 10s. to	£2	15s. 0d.
Cliff's Fire-bricks (at Wortley)—per 1000		2	15 6
Ingham's ditto (at Wortley)—per 1000		2	15 0
Fire-clay Retorts—per foot run	5s. 6d. to	0	7 0
Tough Cake Copper—per ton		93	0 0
English Pig Lead—per ton		20	0 0
Welsh Bar Iron (in London)—per ton		6	0 0
Foreign Spelter—per ton		18	5 0
English Block Tin—per ton		111	0 0
Banca—per ton		115	0 0
Tarred Rope Yarn—per cwt.		1	6 0

Advertisements.

International Exhibition,

July 11, 1862.

Class X., No. 2259.

The Jurors have AWARDED A MEDAL to

JOSEPH CLIFF and SON,

Wortley, nr. Leeds,

For Excellence of Material and Manufacture of

FIRE-CLAY RETORTS FOR GAS.

International Exhibition,

July 11, 1862.

Class XXXV., No. 6841.

JOSEPH CLIFF and SON,

Wortley, nr. Leeds,

Are Awarded Honourable Mention for

STONEWARE DRAIN-PIPES

OF LARGE DIAMETER.

TWO MEDALS AWARDED

GEORGE GLOVER & CO.'S

PATENT DRY GAS-METERS,

STANDARD GASHOLDERS, AND TESTING APPARATUS.

The Sales of Gas Act has rendered a far higher degree of accuracy in Gas-Meters than that generally attained hitherto, indispensable.

This necessity Messrs. George Glover and Co., are prepared to meet, their PATENT DRY GAS-METER being made in accordance with the same high standard of accuracy, and the same conditions and principles as those adopted n the construction of the National Standard Gasholders.

The daily use of these standards at the Exchequer for eighteen months has fully justified the opinion expressed of them by the Astronomer-Royal, in his reports to the Lords Commissioners of Her Majesty's Treasury, as capable of "being applied to Gas Measures of every class, and Gas-Meters of every class, as accurate as it is possible for human skill to make them."

That opinion has been endorsed by the jury in Class X. of the International Exhibition (several of them being eminent in science and engineering), having awarded the fac-simile of the National Standard and the other Gas Apparatus. Messrs. George Glover and Co. exhibit there the only medal for instruments relating to gas measurement which has been awarded in the Class. The award is for "*ingenuity, completeness, and efficiency of apparatus for measuring gas, and for excellence of material and workmanship.*"

Messrs. George Glover and Co. have also had a medal awarded them in Class XXXI. for *the superior construction and workmanship of their Improved Dry Gas-Meter.*

Particulars and lists of prices forwarded on application.

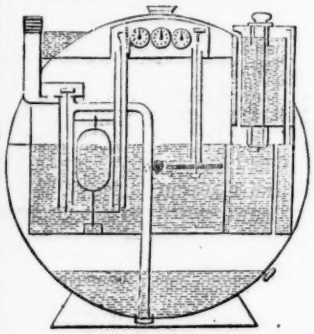
RANELAGH WORKS, RANELAGH ROAD, PIMLICO, LONDON.

Offices: 22, PARLIAMENT STREET, WESTMINSTER; and 15, MARKET STREET, MANCHESTER.

INTERNATIONAL EXHIBITION,

Class XXXI., No. 6300; and Class X., No. 2291; and "Illustrated Catalogue."

PATENT WET METER.



N. DEFRIES,

CONSULTING GAS ENGINEER,

Inventor and Patentee

OF

WET GAS-METERS,

WITH SELF-ADJUSTING WATER-LINE;

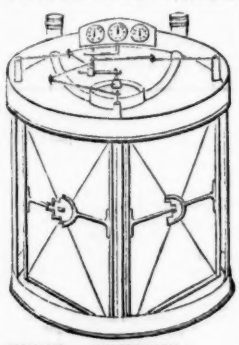
DRY METERS,

GAS-HEATING BATHS, OVENS, STOVES,

GAS FIRES with INDESTRUCTIBLE FUEL,

&c., &c.

PATENT DRY METER.



FACTORY: DIANA PLACE, FITZROY SQUARE. OFFICE: 406, EUSTON ROAD, LONDON,
Eight Doors from Factory.

Attempts having been made to construct Self-Supplying Apparatus to Wet Gas-Meters upon the Bird Fountain principle,—which, although unerring to supply water in the open atmosphere, has not wholly succeeded so as to be relied upon wher. enclosed in a Gas-tight Meter Case,—N. Defries begs leave most respectfully to acquaint Gas Companies, and the Public in general, that he has constructed his PATENT WET GAS-METER upon a method entirely different, being founded on the well-known principle of the self-acting supply of the Oil Lamp, which has never been applied for the adjustment of the Meter Water-Line before, and which, by the admission of external air to a chamber sealed from Gas, will never fail to faithfully perform its required function. They are of the very best materials and workmanship, will stand more pressure than is required as the test for soundness by the New Act, are guaranteed to prevent surreptitious burning without detection, and will be kept in repair free of charge for seven years.

N. DEFRIES'S CELEBRATED DRY METERS,

of which more than 80,000 are in use in Palaces, Churches, Chapels, Royal Dockyards, Club Houses, Public Offices, and other Buildings throughout the Empire and Continent, which have done so much in checking surreptitious burning, and simplified the fitting up of Gas.

To remove any doubt of accuracy of measurement his Meter for 1500 lights, in use upwards of ten years at the Royal Italian Opera, until that Building was destroyed by Fire, was long afterwards dug out of the burnt ruins, then tested by the Chartered Gas Company in the presence of George Lowe, Esq., F.R.S., and other Chief Officers, and found inflexibly correct. Also, on the 9th of June, 1858, at the Western Gas-Works, his Meter for 150 lights, after considerable use, was doubted, and subjected to the most variable tests—from the full lighting to a single Jet—and in each case, as in other instances, accuracy was finely indicated.

As to durability, his two large Meters at the Thames Tunnel have been in use night and day for upwards of twelve years—one continuation of dark hours—subjected to the wear and tear of seventy-five years as compared with the ordinary business hours of using Gas above ground.

LORD REDESDALE'S SALE OF GAS BILL.

All Meters constructed by N. DEFRIES are guaranteed to pass the Provisions of the Standard.

No alteration has been necessary in the Meters he continues to supply to the Chartered, Imperial, City of London, Equitable, and other large Companies, his accustomed range of 1 per cent. over and under meeting all the desired requirements; whereas, by the New Act, a greater departure from accuracy—viz., 2 per cent. fast to 3 per cent. slow—is permitted.

GUEST & CHRIMES,

FOUNDRY AND BRASS-WORKS, ROTHERHAM,

AND

37, SOUTHAMPTON STREET, STRAND, LONDON,

(Late CROSLEY & CO.,)

GAS-METER MANUFACTURERS,

REMOVED, from 103, SOUTHWARK BRIDGE ROAD, LONDON, to

ROTHERHAM.

Gas-Meter Works, 103, Southwark Bridge Road,
London, April, 1862.

SIR,

I have the pleasure to inform you that I have ceased to be a gas-meter manufacturer, having disposed of my business to the well-known firm of Guest and Chrimes, of Rotherham, the makers of the Patent High-Pressure Water-Meter, and High-Pressure and Patent Fire-Cock, who will henceforth be the Sole Manufacturers of Crosley and Goldsmith's Patent Compensating Wet Gas-Meter.

The well-established reputation of that firm, as to quality of materials and workmanship of all goods supplied by them, is a sufficient guarantee that the character of these Meters will be maintained at the high standard of excellence which has always attached to them; and I have full confidence in asking for them a continuance of the patronage I have hitherto enjoyed from you.

My late manager, Mr. Lane, remains with Messrs. Guest and Chrimes, in the position he has held in these works since their establishment. Begging you to accept my best thanks for the favours I have received at your hands during my connexion with the business,

I am, Sir, yours most obediently, ISAAC BRIGGS.

Foundry and General Brass-Works, Rotherham, and 37, Southampton Street, Strand, London, W.C.
Rotherham, April 11, 1862.

We have the pleasure of informing you, as intimated in the annexed letter, that we have purchased the business of Mr. Isaac Briggs, of 103, Southwark Bridge Road, London, Manufacturer of Crosley and Goldsmith's Patent Compensating Gas-Meter, which it is our intention to remove to our works at Rotherham. The established character of the Meter for accuracy of registration needs no comment from us. It is especially constructed to meet all the requirements of the recently-imposed Sale of Gas Act, and upon such certain and simple principles as to insure correctness of measurement for long periods, without involving the necessity of constant care and attention on the part of the companies' inspectors and officers, as the large quantity of water contained in the surplus reservoir (except in extreme cases) will insure many months working. We have, therefore, the greatest confidence in soliciting your orders, feeling quite certain of their giving full satisfaction; and we would remark that, though apparently a high price, yet, when the quality of the workmanship and materials is taken into consideration, in addition to the large capacity of the Meter, and its other advantages, it will bear a comparison with any first-class article.

We would add that, although not enumerated, all the various articles made by the late firm will be manufactured by us, and under the same management as previously. We hope shortly to be in a position to submit to you a detailed description of the Meter, and all other articles we manufacture connected with Gas, its distribution and consumption, with prices of the same. Soliciting your commands,

We are, yours respectfully, GUEST & CHRIMES.

SOLE MANUFACTURERS OF

CROSLEY & GOLDSMITH'S

PATENT SELF-ADJUSTING & COMPENSATING GAS-METERS,

Which, by a simple arrangement of machinery, maintain a constant, true Water-Line.

N.B.—The Patent can be applied to any existing Wet Gas-Meters.

Manufacturers of EXPERIMENT METERS, GOVERNORS, MINUTE-CLOCKS, PHOTOMETERS, &c., &c., similar to those used by Mr. King, of Liverpool; and other Patterns.

Consumers' Governors; Inspectors' Pocket, and all other kinds of Pressure-Gauges; Thermometers;

STANDARD TESTING GASHOLDERS,

And Apparatus required under the Sales of Gas Act.

STATION-METERS & GOVERNORS; PRESSURE-REGISTERS & EXHAUSTER-REGULATORS.

Also, Manufacturers of LOWE'S PATENT MOTIVE-POWER METER, for situations where there is an inadequacy of pressure to supply the special requirements of certain consumers in low grounds during the day or night. Also,

MANUFACTURERS OF

BATEMAN AND MOORE'S, AND CHRIMES'

PATENT HYDRANTS, OR FIRECOCKS.

Improved Sluice-Cocks and Gas-Valves; Chrimes' Patent High-Pressure Single and Double Loose-Valve and Screw-Down Cocks; Pilbrows' Patent Water-Waste Preventer;

PATENT ABSOLUTE WATER-WASTE PREVENTER;

Siemens' Patent Balance Water-Meter; Bell and Chrimes' Patent Service-Box Valve; Improved Self-Acting and Pull Water-Closet;

ESKHOLME'S PATENT PNEUMATIC REGULATOR and VALVE-CLOSET.

Lowe's Patent Effluvia-Traps, Begg's Improved; Fire-Extinguishing Apparatus; Galvanized Iron Tubes and Fittings; *Gas Chandeliers, Brackets, and Fittings; Glass Chandeliers and Brackets.*

All the above articles may be seen on application to

THOMAS BEGGS, 37, Southampton Street, Strand, London; or to

GUEST and CHRIMES, Brass-Works, Rotherham,

Manufacturers of Plumbers' and Gas-Fitters' Brass-Work of every description.

Drawings, Descriptions, Prices, and Testimonials, will be forwarded per Post, on application as above.

GEORGE CUTLER & CO.,
GAS ENGINEERS, &c.,
London Gasholder and Boiler Works,
8, WHARF, WENLOCK ROAD, CITY ROAD, N.,
LONDON.

Rye, Nov. 12, 1860.

Dear Sirs,—I consider it incumbent on me to acquaint you that the alterations recently made on the Rye Gas-Works—viz., the addition of a NEWLY-IMPROVED WASHER, and other work for the Purification of Gas, executed by the experienced workmen under your able supervision—are perfectly satisfactory to the Company, and the Gas is now as pure as it can be made.

I am, dear Sirs, your obedient servant,
CHARLES THOMAS, Superintendent,
Rye Gas-Works.

Messrs. Cutler and Co.

JOHN ROGERSON and CO.,
NEWCASTLE-ON-TYNE & MIDDLESBRO'-ON-TEES.

Wrought and Cast Iron Pipes, Cast-Iron Retorts, and all kinds of Foundry Work necessary for Gas-Works. Fire-Bricks and Clay Retorts. Gas Coals of every description. Pig, Bar, and Plate Iron.

LONDON HOUSE:
12, ROYAL EXCHANGE BUILDINGS.

WHITEHOUSE and CO., Boiler and GASHOLDER MAKERS,
GLOBE PATENT TUBE WORKS, WEDNESBURY,

Beg to draw the attention of Engineers and Managers of Gas Works to the superior quality of the Article they manufacture, both in respect of the iron employed, and the perfect manner in which it is welded; in proof of which they can refer to the testimonials of the most eminent Gas Engineers, and the experience of the principal of the large Gas Companies of the kingdom.

Orders promptly executed.

TO INVENTORS AND PATENTEES.

MR. W. H. BENNETT, having had considerable experience in matters connected with Gas, Water, and Sanitary Improvement, begs to say that he continues to assist Inventors in the perfection of their designs, and to obtain for them PROVISIONAL PROTECTION, whereby their invention may be secured for Six Months; or LETTERS PATENT, which are granted for Fourteen Years.

Patents completed, or proceeded with at any stage, thereby rendering it unnecessary for persons resident in the country to visit London.

Patents procured for Foreign Countries.

Information as to cost, &c., supplied gratuitously upon application to the advertiser, 42, Parliament Street, WESTMINSTER. [Office of the JOURNAL OF GAS LIGHTING, &c.]

WALTER MABON, Engineer,
ARDWICK IRON WORKS, FAIRFIELD STREET, MANCHESTER,
Manufacturer of
IRON TANKS for Gasholders, Railway Stations, &c.

GASHOLDERS.—Extensive premises at Gorton, solely for the manufacture of Gasholders, and other heavy Wrought-Iron Structures.

GAS APPARATUS.—W. M. has an extensive assortment of patterns for Purifiers from 4 feet to 15 feet square, also round ones from 4 feet to 10 feet diameter; Scrubbers, Condensers, Washers, Columns, Girders, and Tripod Patterns, suitable for Gasholders, from 10 feet to 150 feet diameter, either Single-lift or Telescope. Contracts for Gas-Works of any Magnitude. Designs, Specifications, and Estimates furnished.

WROUGHT and CAST IRON ROOFS for Railway Stations, Gas Works, Warehouses, and Sheds, prepared for Slates or for Corrugated Iron.

IRON HOUSES, either for Dwellings, Manufactories, or Public Buildings.

PIPES and VALVES, for Gas and Water, from 2 inches to 48 inches bore.

GAS ENGINEERING OFFICES,
16, ADAM STREET, ADELPHI, W.C.
(Close to the Society of Arts.)

Mr. ANDERSON continues to Erect, or to supply the Drawings for his PATENT RETORT-SETTINGS. On this principle, three Ovens of Retorts are heated by one Coke and one Tar fire; and, for small Works, the principle is adapted to single Ovens in both cases, with a total absence of smoke, while the duration of the Retorts is from two to three years, and with great economy of fuel.

Mr. ANDERSON continues to supply his PATENT GAS-EXHAUSTER, together with Steam-Engines, &c., erected complete.

This is the most simple machine of the kind in use, being merely a double-action Pump, which any one can comprehend, and works for years without any repair.

Also, his PATENT FOUR-WAY VALVES. One of these valves does the work of three ordinary valves, when applied to Purifiers, Station-Meters, or other Gas Apparatus.

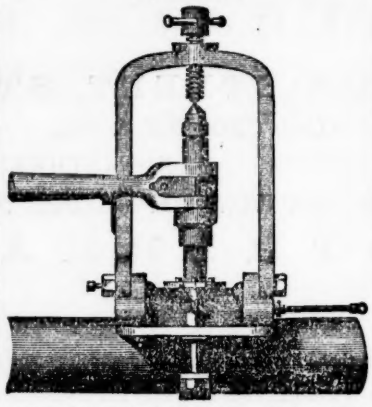
A workman cannot, by any possibility, make the mistake of shutting one passage without opening another; thus ensuring a constant flow of the gas.

All Racks, Pinions, Springs, and other delicate parts of ordinary valves, are in these valves abolished; the Connecting-pipes are also much simplified, and the cost reduced fully 50 per cent.

Also, his CONCENTRIC GOVERNOR, which stands in half the space of the ordinary Governor, and regulates the flow of Gas to the greatest nicety.

Mr. ANDERSON having five Gas-works on lease, besides being engineer to several others, has constant opportunities of perfecting his inventions before they are brought under public notice.

SIMMONS'S
PATENT GAS AND WATER CONNECTOR.



This Machine is invaluable to Gas and Water Companies, Gas-Fitters, &c., being the only Connector whereby accidents can be prevented. It is simple in construction, economical in saving the escape of Gas, and can be worked by a labourer.

No. 1 size, to suit ⅜ and ½ in. Services, £6. 6s. each.
„ 2 „ „ ¾ and 1 „ „ £8. 8s. „
„ 3 „ „ 1¼, 1½, & 2 in. „ £12. 12s. „
Including Rachet Brace, Drills, Taps, &c., complete.

MANUFACTURER,
J. COWDY,
BOND COURT, WALBROOK,
LONDON.

Connectors made for fixing on the ends of Mains, to prevent escape in course of laying.

BIRTLEY IRON WORKS,
CHESTER-LE-STREET,
DURHAM.

Manufactory for every description of Casting and Machinery for Gas Works and Water Works.

Warehouse in London for Cast-iron Pipes and Connections of all sizes and in any quantity, Scott's Wharf, Bankside, Southwark.

Office in London, Mr. E. M. PERKINS, 78, Lombard Street.

JAMES NEWTON & SONS,
(Established 1820,)
FIRE-BRICK AND TILE MERCHANTS,
Wholesale and for Exportation,
FALCON DOCK, 78 AND 79, BANKSIDE,
SOUTHWARK, LONDON, S.E.,
DEPÔT for STOURBRIDGE AND NEWCASTLE FIRE-BRICKS, LUMPS, TILES, and FIRE-CLAY, and every Article suitable for
GAS AND WATER WORKS.

DUPLEX GOVERNOR, for Gas-EXHAUSTER ENGINES.
D. LANE'S PATENT.

This Governor combines great delicacy with remarkable certainty of action. A pressure of one-tenth of an inch of water, operating on a diaphragm of 3 inches diameter, is sufficient to work the Regulating-Valve of an Engine of any power.

TESTIMONIALS.

Borough Engineer's Office, Town Hall
Halifax, March 29, 1862.

Dear Sir,—I have much pleasure in bearing my testimony to the efficiency of your Duplex Governor for regulating the speed of Gas-Exhausters.

The Governor has been perfectly self-acting, and has never given us one moment's thought, trouble, or expense. The engine-man has only to weight the tappets to the required vacuum, and the pressure-register paper never shows a greater variation than three-tenths in the twenty-four hours.

I can very confidently recommend the adoption of it to engineers and managers of gas-works making 50 million feet a year and upwards.

I am, dear Sir, yours faithfully,
G. W. STEVENSON.

Denny Lane, Esq., Cork Gas-Works,
Ireland.

Gas-Works, Cork, April 4, 1862.

Dear Sir,—Having for some time past had in use three of your newly-invented Regulators for governing the speed of Steam-Engines in connexion with Gas-Exhausters, I am glad that I am able to speak of this valuable machine in terms of the highest praise. I have had them applied, as you know, to high-pressure and condensing engines, with Beale's and also Anderson's Exhausters. In every case, this small and valuable instrument is thoroughly effective in regulating the speed of the Exhauster. No amount of care with the hand can equal its accuracy of action for the intended purpose.

Denny Lane, Esq. A. H. STILL, C.E.

An Illustrated Circular, explaining the operation of the Governor, can be obtained by application to D. LANE, 72, South Mall, CORK; and the Governor can be seen in London at the Offices of GEO. ANDERSON, Esq., C.E., 16, Adam Street, ADELPHI.

JAMES OAKES and CO.,
ALFRETON IRON WORKS, DERBYSHIRE,
AND
WENLOCK IRON WHARF, 20, WHARF ROAD, CITY ROAD, LONDON,

Beg to inform Gas and Water Companies and the public, that they keep in stock in London all the CASTINGS in general use in Gas and Water Works, including Iron Retorts, Socket and Flange Pipes, Bends, Branches, and Syphons of all sizes, Lamp Columns, &c., &c.

N.B.—Orders for Cast-iron Tanks, Girders, Columns, Cylinders, and all irregular castings, will have immediate attention.

CHARLES HORSLEY, Agent.

HENRY BALFOUR AND CO.,
ENGINEERS & IRONFOUNDERS.
DURIE FOUNDRY,
LEVEN, FIFE;
& 16, ADAM STREET, ADELPHI, LONDON, W.C.

Gas Engineers and Contractors for Gas and Water-Works; manufacturers of Steam Engines and Exhausters, Steam Boilers, Gasholders, Cast-Iron Tanks, Purifiers, Condensers, Iron Retorts, Gas and Water Pipes.

Plans, Specifications, and Estimate furnished for new, or for extensions and alterations on existing, Works.

ALFRED PENNY, Gas and CONSULTING ENGINEER,
WENLOCK IRON WORKS,
21 & 22, WHARF ROAD, CITY ROAD, LONDON.

Mr. PENNY having had a large experience in the construction, alteration, and management of Gas-Works, begs to inform the Directors of Gas Companies that he may be consulted on all matters appertaining thereto. He also manufactures Gasholders, Purifiers, and all the various apparatus used in Gas-Works, and keeps in stock Retorts and Mouthpieces, Socket-Pipes, Bends, Branches, T-pieces, &c. &c.

Plans, Specifications, and Estimates prepared.

INTERNATIONAL EXHIBITION,
1862. CLASS X.
PRIZE MEDAL
For excellence of Fire-Clay Gas Retorts, and "HONOURABLE MENTION" for good quality of Fire-Bricks.

WILLIAM STEPHENSON & SONS,
THROCKLEY,
NEWCASTLE-ON-TYNE,
MANUFACTURERS OF EVERY DESCRIPTION OF
FIRE-BRICKS, CLAY RETORTS
&c. &c.
RETORT MOUTHPIECES, BOLTS, NUTS, &c.

GEORGE BOWER,
GAS ENGINEER, MANUFACTURER, AND CONTRACTOR,
ST. NEOT'S, HUNTS.

References to between 100 and 200 Gas-Works Designed and Erected by the Advertiser.

LESLIE'S PATENTS: Gas and Coke from Common Coal, greatly increased in value.—60, Conduit Street, LONDON, W.

LESLIE'S PATENTS: Up to Forty Candle Gas.—60, Conduit Street, LONDON, W.

LESLIE'S PATENTS: Licenses for England, Scotland, and Ireland, the 86 Departments of France and Belgium.—60, Conduit Street, LONDON, W.

LESLIE'S PATENTS: The National Waste Heaps at Collieries UTILIZED for Gas purposes.—60, Conduit Street, LONDON, W.

STOURBRIDGE FIRE-CLAY WORKS.
E. BAKER and CO.
(Contractors to Government).
24 WHARF, HARROW ROAD, PADDINGTON, W.

Every article manufactured at their own Works and Mines, Brierley Hill.

FIRE-BRICKS, Lumps, Squares, Tiles, and Gas Retorts of all dimensions.
CRUCIBLE and CEMENT CLAYS.
GARDEN EDGINGS, of various patterns.
BUFF and ORNAMENTAL TILES.
CLINKERS and STABLE PAVINGS, noted for hardness and durability, being perfectly non-absorbent.

Shipments on the shortest notice.

BEVERLEY'S Patent Equitable GAS-METER,
From which the Water cannot be abstracted.

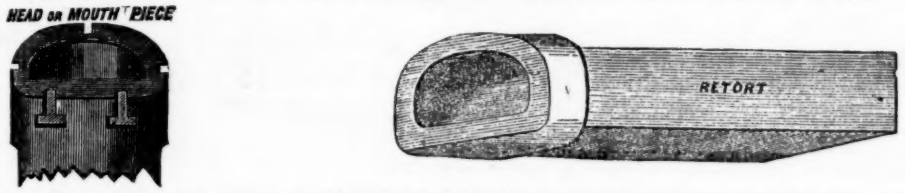
JOHN BEVERLEY & SON,
GAS-METER MANUFACTURERS, &c.,
LEEDS, YORKSHIRE,

Are prepared to supply the above Meters, either stamped or otherwise, and to adapt their patented principle to any old Meters that may be sent to them to be repaired, tested, and stamped.

Manufactory, No. 9, Mark Lane, LEEDS.

KING BROTHERS,

STOURBRIDGE FIRE-BRICK AND RETORT WORKS.



KING BROTHERS beg especially to call the attention of Gas Companies to the superiority of their Retorts, which are made from the celebrated STOURBRIDGE FIRE-CLAY. Mr. King has patented a Kiln for burning Retorts, by which Patent all Cold Air is excluded from the Kiln while burning, thus rendering them FREE FROM CRACKS AND CORRECT IN FORM. By great care in Manufacturing, combined with the advantages in burning, a VERY SMOOTH SURFACE is obtained, rendering them less liable to carbonize.

Retort Ovens, Fire-Bricks, Guards, Saddles, Rabbitted Burs, Flues, and Quarries, are all Manufactured of the same quality of Clay.

Every Retort and Brick is branded "King Brothers, Stourbridge."

R. LAIDLAW & SON,

GAS ENGINEERS, IRON & BRASS FOUNDERS,

Alliance Foundry, 147, East Milton Street, and Barrowfield Iron-Works,

GLASGOW;

AND AT SIMON SQUARE, EDINBURGH;

MANUFACTURERS OF

STATION & CONSUMERS METERS, ALL SIZES;

WROUGHT-IRON TUBES, FOR GAS, WATER, & STEAM; CAST-IRON RETORTS & PIPES;

HYDRAULIC MAINS, CONDENSERS, WASHERS, SCRUBBERS, PURIFIERS, & TANKS.

GASHOLDERS;

GOVERNORS, SLIDE-VALVES, &c.;

WROUGHT & CAST IRON ROOFS & HOUSES.

Contractors for Gas-Works of any Magnitude. *Plans, Specifications, and Estimates furnished.*

SOLE AGENT FOR THE SOUTH, SOUTH-EAST, AND SOUTH-WEST OF ENGLAND:—

J. E. DOWSON, 8, BANKSIDE, SOUTHWARK, LONDON, S.E.

TRUSS'S PATENT ELASTIC PIPE-JOINT,

FOR GAS AND WATER-MAINS, AND STEAM PIPING,

Is the only PERFECT joint that has ever been constructed, and supplies the long-felt desideratum, by allowing for the expansion and contraction of metals, and for oscillation and deflection, without impairing the joint. Gas Companies will effect an incalculable saving in adopting it, as compared with the present imperfect mode of jointing.

Drawings, Estimates, and every particular, furnished on application to

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LLOYD AND LLOYD

ALBION TUBE-WORKS, BIRMINGHAM,

MANUFACTURERS OF

WROUGHT-IRON TUBES & FITTINGS,

PLAIN, GALVANIZED, & ENAMELLED, for Gas, Steam, and Water, from $\frac{1}{8}$ in. to 6 in. bore.

STOCKS TAPS, and DIES, GUN METAL GLAND-COCKS, WATER-GAUGES, &c.;

PATENT LAP-WELDED IRON TUBES,

For Locomotive and Marine Boilers, &c.

LONDON WAREHOUSE—No 66, QUEEN STREET, E.C.

FIRE-CLAY GAS RETORTS.

ESTABLISHED IN 1795.

JOSEPH CLIFF and SON,

WORTLEY FIRE-BRICK WORKS, near LEEDS,

Are Awarded the PRIZE MEDAL for Excellence of Material and Manufacture of Clay Retorts, July 11, 1862.

Class X., No. 2259.

THESE RETORTS are unrivalled in excellence, being the BEST FINISHED INTERNALLY, and THE MOST CORRECT IN FORM, of any in the Kingdom. From the peculiar composition used in working up the face of the material, they are rendered unusually smooth, close, and FREE FROM SURFACE CRACKS, thus, in a great measure, preventing leakage and the adhesion of carbon to their interior surface.

To meet the yearly increasing demand of UPWARDS OF THIRTY SEASONS and to carry out the late improvements in the manufacture, the Premises have been re-erected and much enlarged, and Engineers may rely WITH CONFIDENCE on their orders being completed with a greater regard to despatch than by any other House.

THE WORKS ARE WELL SITUATED

For EXPORT from the Ports of LONDON, LIVERPOOL, HULL, MIDDLESBRO', HARTLEPOOL, and STOCKTON.

FIRE-BRICKS, LUMPS, GUARDS, TILES, AND CLAY OF THE SAME QUALITY.

M. P. NEWTON, London Agent, No. 4, Wharf, King's Cross Goods Station.

WILLIAM INGHAM AND SONS,

WORTLEY FIRE-BRICK AND RETORT WORKS,

Near

Leeds.

W. INGHAM and SONS, having for many years been extensively engaged in the Manufacture of

RETORTS AND FIRE-BRICKS FROM THE CELEBRATED WORTLEY FIRE-CLAY,

beg to call especial attention to their RETORTS, which have for many seasons proved to be unsurpassed in quality by any in the Kingdom, their FREEDOM FROM CRACKS and the ADHESION OF CARBON rendering them worthy the attention of all parties interested in the making of Gas.

The Works are of such magnitude as to ensure the prompt execution of orders to any extent.

Estimates for Setting, or Bricklayers sent when required.

GAS OVENS IN SEGMENTS OF EQUAL QUALITY.

A large stock of Fire-Bricks, Fire-Clay, Terra Cotta, and Drain-Pipes of all sizes kept in London at CHRISTIE & CO.—Wharf, 64, Bankside, Southwark, where all particulars of Prices, &c., may be obtained.

N.B.—*Export orders continue to have prompt attention.*

WILLIAM RICHARDS,

SOLE INVENTOR AND FIRST MANUFACTURER

OF THE

DRY GAS-METER,

Which obtained Prizes at the Exhibitions of London, 1851; New York, 1853; Paris, 1855; and three Prizes at the present Exhibition of 1862.

CRAWFORD PASSAGE, COPPICE ROW, CLERKENWELL, LONDON.

W. RICHARDS invites the attention of Gas Companies and Engineers to the Dry Meter manufactured by him, as possessing advantages over others, by his method of disposing of the flexible material, so that collapsing or bagging of the same is avoided. This defect, so conspicuous in some of the meters of other makers shown at the Exhibition, causes the measurement of the instrument to vary under different circumstances, and the durability of the same is materially impaired.

In the meters manufactured by W. Richards, all the metals of the working parts are incorrodible; the flexible material, the best that can be employed; and, in general construction, they are not to be surpassed.

To those who prefer the Wet Meter, W. Richards submits his patented improvements in the same, which consist in contracting the measuring-wheel at, and near, the water-line—thus allowing of a longer range for the float, and avoiding the sudden extinctions now so common; also, a simple remedy is applied to prevent fraudulent consumption, which the operation of the Sales of Gas Act has so much facilitated.

TELL-TALE EXHAUST AND PRESSURE-INDICATORS;

GOVERNORS, STATION-METERS, &c.

WILLIAM SUGG,

MANUFACTURER OF

PATENT DRY AND WATER GAS-METERS, TEST GASHOLDERS, AND APPARATUS,

"EVANS'S" PHOTOMETERS,

Experimental Meters, Minute Clocks, &c., Station-Meters and Governors,

STREET-LAMP GOVERNORS AND LAVA BURNERS,

19 and 20, MARSHAM STREET, WESTMINSTER.

INTERNATIONAL EXHIBITION, 1862.

TWO PRIZE MEDALS.

Class 13, No. 2973.

PHOTOMETERS, &c.,

Jury Award: PRIZE MEDAL,

For "Photometric Apparatus—for a well-constructed Apparatus to determine the Illuminating Power of Coal-Gas."

(PHILOSOPHICAL INSTRUMENTS, *North Gallery.*)

Class 31, Section B, No. 6350.

METERS, GOVERNORS, &c.,

Jury Award: PRIZE MEDAL,

For "General Excellence of Workmanship, and for his Improvements in Gas-Burners and Photometrical Apparatus."

(*Opposite* AMERICAN DEPARTMENT.)

LIVESEY FIRE-CLAY WORKS,

NEAR BLACKBURN, LANCASHIRE.

ORLANDO BROTHERS,

MANUFACTURER OF PATENT CLAY RETORTS,

AND EVERY DESCRIPTION OF

TUBULAR GLAZED SEWERAGE PIPES, BENDS, JUNCTIONS, ETC.

FIRE-BRICKS, TILES, BLOCKS, AND CHIMNEY-TOPS.

INTERNATIONAL EXHIBITION, 1862.

Class X. No. 2265.

THE JURORS HAVE AWARDED TO

JOSEPH COWEN & CO.,

BLAYDON BURN, NEAR NEWCASTLE-ON-TYNE,

THE PRIZE MEDAL FOR "GAS RETORTS, FIRE-BRICKS, &c., FOR

EXCELLENCE OF QUALITY."

JOSEPH COWEN & CO. were the only parties to whom a Prize Medal was awarded in the Great Exhibition of 1851 for

"GAS RETORTS AND OTHER OBJECTS IN FIRE-CLAY."

SERVIER'S

PATENT

SELF-ACTING GAS GOVERNOR.

This Instrument, which is designed to replace the ordinary Governor,

Operates solely by the Action of the Gas, without any Alteration of Weights, or the Assistance of any intermediate Agency or Apparatus whatever;

And it will maintain a Constantly Uniform Pressure in Gas-Distributing Mains, at any given point of their circuit.

All Applications for Licences to Manufacture or to Use the Apparatus to be made to

Mr. W. H. BENNETT, 42, Parliament Street, Westminster.

WILLIAM & BENJAMIN COWAN,

PATENT WET & DRY GAS-METER MANUFACTURERS,

Buccleuch Street Works, Edinburgh, & 13, Strutt Street, Manchester.

Established 1827.

SOLE MANUFACTURERS OF

ESSON'S PATENT COMPENSATING GAS-METERS;

KAY'S PATENT HYDRAULIC VALVE GAS-METERS;

Also, DRY METERS OF THE MOST APPROVED DESCRIPTION;

All of the above being Stamped under the Provisions of the SALE OF GAS ACT.

W. and B. C. likewise supply ESSON'S PATENT COMPENSATING FOUNTAINS, and KAY'S PATENT HYDRAULIC VALVES, now so extensively used for bringing ordinary Meters within the requirements of the Act of Parliament. Gas Companies can, therefore, either attach the FOUNTAINS or VALVES to their old Meters themselves, or forward them to W. and B. C. for Alteration and Stamping.

GOVERNORS, STATION-METERS, PRESSURE-REGISTERS & GAUGES,

MINUTE-CLOCKS, PHOTOMETERS, EXPERIMENTAL METERS,

AND ALL OTHER DESCRIPTIONS OF GAS APPARATUS.

INTERNATIONAL EXHIBITION,

Class 31 (Sub-Class B), No. 6288.

International Exhibition, 1862.

MESSRS.

CROLL, RAIT, AND CO.,

Manufacturers of Croll's Patent Improved

DRY GAS-METER,

Exhibited in Class XXXI. (B),

Have obtained the Medal for

"GOOD CONSTRUCTION AND SOUND WORKMANSHIP."

FACTORY:

CANAL BRIDGE, KINGSLAND ROAD, LONDON, N.E.

ALEXANDER WRIGHT,

55 and 55A, MILLBANK STREET, WESTMINSTER, S.W.,

MANUFACTURER OF

CONSUMERS' COMPENSATING & NON-COMPENSATING WET GAS-METERS,

Of the best material and workmanship, carefully adjusted to meet the requirements of the SALES OF GAS ACT.

STATION-METERS & GOVERNORS,

WRIGHT'S REGISTERING PRESSURE-GAUGE, EXHAUSTER REGISTER, & REGULATOR;

STANDARD TEST GASHOLDERS;

Consumers' Governors; Inspectors' Pocket, King's, and all other kinds of Pressure-Gauges; Thermometers for Condensers, Pressure Registers, &c., &c.

EXPERIMENTAL TESTING APPARATUS,

Employed by the best experimenters in this country and on the continent, and by the Gas Testers in the London districts.

PHOTOMETERS, SPECIFIC GRAVITY APPARATUS, BI-SULPHURET OF CARBON TEST, THOMPSON'S BROMINE AND HEATING POWER OF FUEL TESTS, IMPROVED ALKALIMETER, EXPERIMENTAL METERS AND GOVERNORS, MINUTE CLOCKS, &c., &c.

"Analysis of Gas for Practical Men," by A. WRIGHT, M. Inst. C.E., post-free for 13 Stamps. PRICE-LISTS ON APPLICATION.

JAMES MEACOCK,

PATENT DRY AND WET GAS-METER MANUFACTURER,

7, SNOW HILL, AND 16, WEST STREET, LONDON.

ESTABLISHED 1836.

J. M. invites attention to his Improvements in EXPERIMENTAL WET GAS-METERS, by which he renders impossible any Leakage from the Stuffing-Box.

These METERS are GUARANTEED to meet all the Requirements of the SALE OF GAS ACT

GOVERNORS, STATION-METERS, PHOTOMETERS,

EXPERIMENTAL TESTING GASHOLDERS, HIGH-PRESSURE GAUGES,

AND ALL APPARATUS IN USE AT THE GAS MANUFACTORY.

D. HULETT and CO., 55 and 56, HIGH HOLBORN, LONDON,

PATENTEES and MANUFACTURERS of the ONLY GOOD MERCURIAL GAS REGULATOR,

invite the attention of Gas Companies and the Trade generally to their Improved GAS-METERS, which they warrant equal to any in Quality, Workmanship, and Simplicity of Construction, and the only Meters from which Gas cannot be obtained without being duly registered.

MANUFACTURERS OF

GAS CHANDELIERS, GLASS LUSTRES, HALL LANTERNS, VESTIBULES, BRACKETS, PENDANTS;

DOUBLE CONE, ALBERT, SHADOWLESS, & EVERY DESCRIPTION OF BURNER, UNION JETS, BATSWINGS, ETC.;

IMPROVED FULL-WAY CARTER'S VALVES (much approved of);

GAS-STOVES, and every article connected with Gas Apparatus.

CAST & WROUGHT-IRON PIPE BLACK & GALVANIZED. COPPER, TIN, BRASS, & COMPOSITION TUBING.

D. HULETT'S IMPROVED SERVICE CLEANSER

for clearing out Mains, Services, and Interior Fittings—60s. net.

Boyle's Patent Silvered Glass Combination Reflectors and Outside Lanterns.

Sole Manufacturers of Church and Mann's Photometer.

Large Pattern Books, with every description of Gas-Fittings, Chandeliers, &c., with complete Book of Prices, 12s.

London: Printed by WILLIAM BOUGHTON KING (at the Office of Clayton and Co., 17, Bouverie Street, Fleet Street); and published by him at No. 11, Bolt Court, Fleet Street, in the City of London.—Tuesday, September 23, 1862.